ECOSYSTEM SENSITIVITY TO ACID PRECIPITATION FOR QUEBEC

Environmental Conservation Service
Acid Precipitation Research

Ecological Land Classification Series,
Number 20

ECOSYSTEM SENSITIVITY TO ACID PRECIPITATION FOR QUEBEC

Part A
Ecoregions and Ecodistricts of Quebec

by
G. Gilbert, R.G. Hélie and J.M. Mondoux

Part B
Acid Precipitation Sensitivity
Evaluation of Quebec

by
L.K. Li

ECS Acid Precipitation Research
1985

Lands Directorate
Environmental Conservation Service
Environment Canada

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Land Classification
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COVER: Early morning fog on the Lièvre River near southern Gatineau, Quebec (photo by R.G. Hélie).

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Catalogue No.: En 73-3/20E
ISBN No.: 0-662-14525-9

PREFACE

This report represents the collective efforts of scientists with diversified expertise in terrain sciences, botany, and landscape ecology, to develop an ecological data base for Quebec and its application to acid precipitation sensitivity assessment. The report is organized into two parts, authored by G. Gilbert, R.G. Hélie and J.M. Mondoux (Part A) and L.K. Li (Part B). In part A, an ecological land survey for the Province of Quebec is presented at the ecodistrict and ecoregion levels of a nationally recognized classification hierarchy. The survey is based on an integrated compilation of terrestrial ecosystem data on geology, geomorphology, soils, relief, and vegetation. Maps of the ecodistricts and ecoregions occurring in Quebec accompany this report in a pocket on the back cover.

In Part A, ecodistrict data are based on an unpublished, interim report entitled "Les Écodistricts du Québec" by G. Gilbert, J.M. Mondoux and M. Quirion (1981). However, due to substantial editing, revision, and the addition of new material on ecoregions in this report, the first effort has been greatly enhanced. As the field surveys supporting this project were conducted prior to the completion of hydroelectric projects in the James Bay area, several major reservoirs are not shown on the accompanying map of or in the text in this report.

In Part B, the potential ecosystem sensitivity to acidic precipitation of each ecodistrict is based on soil and bedrock factors. These ecodistricts are grouped into three sensitivity classes: low, intermediate and high. A fourth class, organic terrain, is indicated on the map but remains unrated. This application of the ecodistrict data base for acid precipitation sensitivity assessment follows criteria established for the United States-Canada Memorandum of Intent on Transboundary Air Pollution (Memorandum of Intent, 1983), with the addition of northern Quebec and several refinements in the methodology.

This report is a continuation of the Lands Directorate's efforts to develop techniques and comprehensive ecological information systems to meet the challenges facing land managers today. Other reports published by the Lands Directorate present integrated ecological data bases elsewhere in Canada. These include: Lopoukhine et al (1978) covering Labrador, Wiken et al (1981) for the Northern Yukon, and Wiken et al (1986) covering the District of Keewatin, N.W.T..

ACKNOWLEDGMENTS

Many constructive comments by Ed Wiken and Gary Ironside of the Lands Directorate have been included in the text. We also thank Danielle Bégin and Alain Mercier who provided the english translation of the original french text, and the Environmental Conservation Service Drafting Division who produced the ecodistrict and ecoregion maps.

In the research and preparation of Part B of this report, the assistance of Robert Hélie, Clayton Rubec and Rob Sayer was invaluable. Drafting for the Quebec sensitivity map was by Terra Surveys Ltd., Ottawa, with the assistance of the Environmental Conservation Service Drafting Division, Environment Canada.

The overall report has been prepared under the supervision of, and edited by Clayton Rubec of the Lands Directorate.

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1.0 INTRODUCTION

In 1980 the Lands Directorate initiated the development of a national integrated ecological data base that was to incorporate descriptive information at a regional scale pertaining to terrain, vegetation, water, and wildlife.

Eastern Canada was adopted as the first part of the country to be completed, mainly in response to an urgent requirement by the federal government to develop an assessment of the resources at risk with respect to the Long Range Transport of Airborne Pollutants (LRTAP) program. The Canada-United States Memorandum of Intent on Transboundary Air Pollution (Memorandum of Intent, 1981) required evaluation of the distribution and characteristics of terrain and waters most sensitive to airborne acidic deposition. For this purpose, the Lands Directorate determined that a suitable, rapid, and low-cost ecological data base for this evaluation could be developed, based on proven principles and techniques established in northern regions by the Directorate (Wiken et al, 1980).

The report provides the final output for this project for the Province of Quebec. The applications of this Quebec data base to acid precipitation sensitivity assessment are presented in the Memorandum of Intent (1983) and in Part B of this report.

The Quebec data base and maps form a component of the national application of Ecological Land Survey (ELS) by Environment Canada. The terminology used here follows that established by the Canada Committee on Ecological Land Classification (CCELC) (1979a; 1979b). The development of this system is well outlined elsewhere (Wiken and Ironside, 1977; Environmental Conservation Service Task Force, 1981; Rubec and Wiken, 1983). This hierarchy is comprised of seven levels, listed here in increasing order of detail: ecozone, ecoprovince, ecoregion, ecodistrict, ecosection, ecosite, and ecoelement. The data base comprises two levels of classification within the national system - "ecoregion" and "ecodistrict". An ecoregion is defined by the CCELC (1979a) as a land area which is "characterized by a distinctive ecological response to climate as expressed by the development of vegetation, soils, water, and fauna". An ecodistrict is defined as "a part of an ecoregion, characterized by a distinct assemblage of relief, geology, geomorphology, vegetation, soils, water, and fauna" (CCELC, 1979a). Both the ecoregion and the ecodistrict are part of the ecological land classification hierarchy.

The mapping of the ecodistricts and ecoregions of the Province of Quebec was undertaken in the context of the federal Long Range Transport of Airborne Pollutants (LRTAP) program. This was achieved through the compilation of relatively homogeneous ecological data at a mapping scale of 1:1 000 000. The main components of each ecodistrict are relief (local and regional), the nature and morphology of surficial deposits, vegetation and characteristics of the aquatic ecosystems. During the compilation stages, Quebec was subdivided according to ecodistrict criteria. The resulting 897 ecodistrict polygons are used as the basic ecological map units. Since they pertain to terrestrial ecosystems, they are termed landscape ecodistricts. From the landscape ecodistricts, 32 landscape ecoregions were derived using smaller scale ecoregion criteria. The word landscape used in this context is synonymous with "terrestrial", and the two qualifiers can be used interchangeably.

While the ecodistrict constitutes the basic mapping unit in this study, there are still several levels of generalization at which an ecological land survey can take place. In this case, the geographical relationship between ecodistricts produced an intermediate level of mapping which is neither ecodistrict nor ecoregion. This intermediate level of perception, termed here "geographical subdivision", is not part of the ecological land classification per se, but rather relates ecodistricts and ecoregions on a geographic/physiographic basis. There are 101 such units in Quebec. The landscape ecodistrict data base presented here is organized according to geographical subdivisions so that an individual ecodistrict can be visualized within a geographical context (i.e. it's location within the province) without constantly referring to the map. The relationship between the ecoregions and the spatial distribution of geographical subdivisions is shown on the landscape ecoregion map. The makeup of each landscape ecoregion is defined in terms of it's geographical subdivisions. The corresponding landscape ecodistricts can easily be determined from the data base. This intermediate level of perception has been utilized by other authors (Ducruc and Audet, 1980). While it was convenient to use at a provincial scale, this level of generalization is not suited to a national perspective.

2.0 METHODOLOGY

Given the available resources and time constraints between 1980-83, the mapping

procedure varied considerably from one area of the Province to another. The description of the methodology has been divided in three different geographical areas. These are: the James Bay Territory, the area north of 56°N latitude (Nouveau Québec) and finally, the area south of this parallel, excluding the James Bay Territory (Figure 1).

James Bay Territory

Systematic ecological land survey of the James Bay territory was undertaken by the Lands Directorate, at the scale of 1:125 000 (Jurdant and Gilbert, 1979; Jurdant and Ducruc, 1980; Zarnovican et al 1976). The mapping is essentially based on airphoto interpretation at a scale of 1:60 000 and 1:40 000. The so defined ecological "land systems" (termed "ecosections" by the CCELC, 1979a) were then regrouped according to the nature of the surficial deposits and the relief (Jurdant and Ducruc, 1980). The resulting "ecological districts" (or ecodistricts) are entities which synthesize information obtained from a detailed survey technique which Rowe (1979) has termed the "from below" approach.

Ecoregions in this area were mapped on the basis of vegetation data developed during field surveys over three sampling years (Gerardin, 1980). Other essential parameters pertaining to soils, geology and hydrology were then included to describe the ecoregions. The mapping was specifically biased towards landscape ecology, as opposed to the other two areas described below where information was gathered from a variety of sources, and then adapted to the ecological mapping format.

Nouveau Quebec

The area which lies north of 56°N latitude was mainly mapped using LANDSAT images and national topographical maps at a scale of 1:250 000. For this area, ecodistricts were delineated at a scale of 1:1 000 000 and further described by gathering available published and unpublished information, and the data collected during several reconnaissance flights. The data base includes pertinent information from sources such as the Glacial Map of Canada (Prest, Grant, and Rampton, 1968), the Geological Map of Quebec (Avramtchev and Marcoux, 1979), and studies by Hare (1959) and Rousseau (1974).

Southern Quebec

The description of ecodistricts for the areas of Quebec south of 56°N latitude was achieved through a regional synthesis of available and pertinent ecological information. Much of this information is general, localized, and sparse at the scales considered. Additional data were obtained from a study of LANDSAT images at a scale of 1:1 000 000. Major sources of information for descriptions of the ecoregions were Rowe (1972) and Thibault (1980).

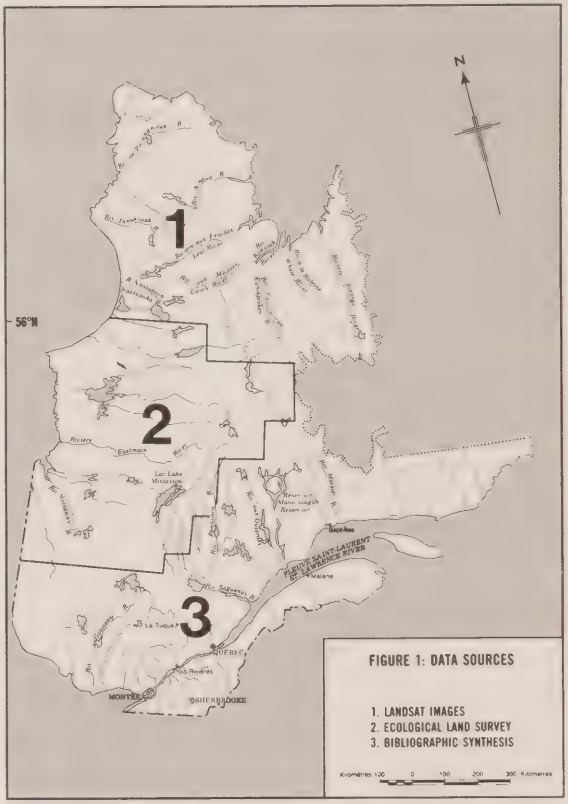


Figure 1: Data Sources

3.0 LANDSCAPE ECOREGIONS

3.1 Introduction

During the project, the province was subdivided into 897 landscape ecodistricts. They are described in Section 4.0. These landscape ecodistricts were then grouped into slightly larger units which are intermediate in scale between landscape ecodistricts and landscape ecoregions. These units, here termed geographical subdivisions and assigned a 2 or 3 letter code on the landscape ecoregion map (in backpocket), convey an intermediate level of generalization which was then used to define the 32 landscape ecoregions covering Quebec (Table 1). Although a description exists for each of the 101 geographical subdivisions, they are only mentioned here and outlined on the landscape ecoregion map in order to show their distribution and to reduce redundancy in these descriptions. A simple numbering system is adopted for the landscape ecoregions, which are each briefly described in the following section.

3.2 Ecoregion Descriptions

Ecoregion 1

This ecoregion occupies a wide and largely barren plateau at the northern tip of the Ungava Peninsula. The average elevation is 100 m to the south and west of the area reflecting relatively even, unbroken terrain. The average elevation increases to the north west (with the highest point at 613 m a.s.l.) where a cliff faces Hudson Strait.

Climate

A harsh Arctic climate prevails on the plateau where temperatures of -50°C in winter are not uncommon. The short frost-free season lasts approximately 23 days at Fort Hope and can be much shorter on the plateau. During exceptionally cold years, summer is practically non-existent. The degree-days of annual growth can be as high as 400 (Wilson, 1971). During the growing season, which lasts 40-60 days, total precipitation is low, but it averages 300-400 mm annually, equally contributed by snow and rain.

Terrain

The bedrock in this ecoregion is composed of foliated granites and granitic gneisses. Vast areas are covered by variable thicknesses of debris resulting from the alteration of the bedrock. Glacially derived deposits are limited to a few eskers and patches of morainal veneer. On, or above the coastline, marine beaches are found mainly in fjords. Continuous permafrost is present throughout the area and influences the surface drainage. Consequently, during the melt season, conditions of excessive soil moisture prevail.

The main soil groups found in the area were identified by Payette (1968). These are, by order of importance: Brunisols, Regosols, Gleysolic Turbic Cryosols, and Organic Cryosols. Payette (1968) emphasized the importance of cryoturbation and solifluction resulting in a continuous rejuvenation process.

Vegetation

The characteristic soils and climate of the region greatly limit the development of vegetation cover. From study of air photos, the tundra surface shows scattered patches of vegetation with 50-90% cover amongst desolate boulder fields. Ground truth suggests a greater variety of vegetation, even in the boulder fields. A ubiquitous cover of lichens, mainly Cetraria nivalis, Alectoria ochroleuca, Cladina alpestris and Cladina rangiferina, often constitutes a 60% surface cover. This assemblage is completed by other species of arctic vegetation (willows, mosses and heath) and clusters of Hierochloe alpina, Calamagrostis neglecta and Poa sp. (1% of surface cover) (Plate 1). The average slopes (5%) are mainly covered by mosses (including Sphagnum recurvum, and Sphagnum teres, (Dicranum groenlandicum, Dicranum elongatum, Dicranum fuscescens, Pleurozium schreberi, Rhacomitrium lanuginosum), an abundance of heath, prostrate shrubs (Cassiope tetragona, Ledum decumbens, Salix arctostaphila) and graminoids (Luzula nivalis). The diffuse drainage of these slopes favor the development of peat which accumulates to thicknesses of more than 40 cm. A dense vegetation, dominated by willow shrubs and a moss cover of Pleurozium sp., flourishes at the base of exposed slopes and on stream banks. The most common shrubs are: Salix planifolia, Salix arctophila, Salix glauca, Salix callicarpaca and Betula glandulosa. In these areas, the graminoids are also more abundant (10 to 20% of surface cover) and include Calamagrostis inexpansa, Calamagrostis canadensis and Poa arctica.

The plateau is dissected by valleys which are excluded from the previous description due to more favorable conditions favoring the

Table 1: Landscape Ecoregions and Geographical Subdivisions of Quebec.

1 -	KO	:	Kovic
	CR	:	Cratère du Nouveau Québec
	SK	:	Saglouc-Koartac
2 -	PO	:	Povungnituk
	CT	:	Lac Couture
	TA	:	Lac Tassialuk
	NA	:	Nastapoka Islands
	UN	:	Ungava Bay
	LO	:	Pointe Louis-XIV
3 -	LD	:	Pointe Le Droit
	FU	:	Rivière aux Feuilles
	NC	:	Lac Nedlouc
	TH	:	Lac Thévenet
	GE	:	Georges River
4 -	BI	:	Lac Bienville
	MA	:	Manitounuk Islands
5 -	HE	:	Lac Henrietta
	LM	:	Lac Lemoyne
6 -	MU	:	Lac Musquaro
	KB	:	Kegashka-Blanc Sablon Coast
	BR	:	Brador Hills
7 -	RO	:	Rivière Roggan
	KA	:	Rivière Kanaaupscow
	LE	:	Lac Legrand
	DE	:	Lac Delorme
8 -	FG	:	Fort George
	SA	:	Lac Sakami
	NI	:	Lac Nichicun
9 -	OP	:	Lac Opiscotéo
	VA	:	Lac Vallard
10 -	OT	:	Otiche Hills
	MG	:	Groulx Hills
11 -	HI	:	Lac Hippocampe
	GO	:	Lac aux Goélands
	SM	:	Smallwood Reservoir
	MN	:	Lac Mistastin
	SC	:	Schefferville Hills
12 -	MIo	:	Lac Mistassini West
	EV	:	Lac Evans
	RU	:	Rupert Bay
13 -	DO	:	Lac Domagaya
	CU	:	Churchill Falls
	AU	:	Rivière Saint-Augustin
	SP	:	Rivière Saint-Paul
	HR	:	Harbour
	MIe	:	Lac Mistassini (East)
14 -	CN	:	North Shore
15 -	MT	:	Lac Matagami
16 -	GUo	:	Gouin Reservoir Highlands (West)
	CHo	:	Lac Chibougamau (West)
17 -	GUe	:	Gouin Reservoir Highlands (East)
	CHe	:	Lac Chibougamau (East)
18 -	LAs	:	Upper Laurentians-Charlevoix-North Shore
	HL	:	Upper Laurentians
	TB	:	Mont Tremblant
19 -	CC	:	Chic-Chocs Hills
	NDs	:	Notre-Dame Uplands
	JC	:	Jacques-Cartier
20 -	AN	:	Anticosti-Mingan
	VO	:	Vauréal Observation
21 -	CM	:	Lac Camachigama
	NE	:	Rivière Némiscachingue
	ALs	:	Laurentian Plateau and Upper Abitibi Plain
	TR	:	Rivière Trenche Uplands
	AS	:	Ashuapmuchuan
22 -	LAm	:	Mid Laurentians-Charlevoix-North Shore)
	FE	:	Ferland Highlands
23 -	NDi	:	Lower and Mid Notre-Dame Hills
	CO	:	Gaspésie Coast and Iles-de-la-Madeleine
24 -	ALi	:	Laurentian Plateau and lower Abitibi Plain
	NO	:	Noranda
25 -	SJ	:	Lac Saint-Jean Plain
	BU	:	Lac Bouchette Highlands
	HS	:	Upper Saguenay Highlands
	BS	:	Lower Saguenay Hills
26 -	ES	:	Saint Lawrence River Estuary
	HA	:	Appalachian Highlands
27 -	RE	:	Rivière Restigouche
	BC	:	Baie des Chaleurs
28 -	BAs	:	East Lower and Mid Appalachians
	ME	:	Summits of the Mégantic Chain and Mount Saint-Magloire
29 -	ML	:	Mid Laurentians (Mauricie)
	BL	:	Lower Laurentians
	BOs	:	Northern Lower Outaouais
	BE	:	Rivières Bersimis and Outardes Lowlands
	LA	:	Laurentians
	MS	:	Saguenay Hills
	CL	:	Laurentian Foothills
	BOm	:	Southern Lower Outaouais
	GA	:	Mid Gatineau
	MOs	:	Northern Mid Outaouais
	MO	:	Mid Outaouais
	MOm	:	Southern Mid Outaouais
	HOs	:	Northern Upper Outaouais
	HOM	:	Southern Upper Outaouais
	LT	:	Lac Témiscamingue
30 -	CA	:	Eastern Townships
	BA	:	West Lower and Mid Appalachians
	ESi	:	Upper Saint Lawrence Estuary Lowlands
	ESs	:	Lower Saint Lawrence Estuary Lowlands
31 -	SLi	:	Lower Mid Saint Lawrence
	SLs	:	Upper Mid Saint Lawrence and Eastern Townships
	OU	:	Lower Gatineau and Ottawa River
32 -	MR	:	Montreal Island and Upper Richelieu
	PL	:	Saint Lawrence Plain and Mid Richelieu

Plate 1: Located on the northern tip of the Ungava Peninsula, Landscape Ecoregion 1 is a vast and dry plateau colonized only by lichens and graminoids on exposed sites and prostrate willows in sheltered sites.

development of a dense vegetation cover where subarctic species appear sporadically. These include: Alnus crispa, Ribes glandulosum and Ledum groenlandicum. On the permafrost, thin valley marshes develop at the base of slopes and palsas are present in the valleys but absent on the plateau.

The western end of the ecoregion (Kovic subdivision) shows numerous beaches colonized by lichens on slopes. The north (Saglouc-Koartac subdivision) is characterized by cliffs and talus slopes denuded of vegetation. The third subdivision of the ecoregion (Cratère du Nouveau-Québec) is formed by a relatively flat plateau, locally covered by a thin morainal veneer.

Ecoregion 2

This ecoregion occupies the southern part of the Ungava Peninsula and is limited by 58°00'N and 61°30'N latitudes. This area, joining the Hudson and Ungava Bays, has an average elevation of 200 m a.s.l., with a few peaks reaching 400 m. Abundant lakes cover 20% of the area and major rivers, such as the Arnaud, are present.

Climate

The long growing season (60-90 days) characterizes this ecoregion. Constant, strong winds (20-25 km/h); average annual temperatures less than -5°C; average temperatures of approximately 9°C in July and -22°C in January are also characteristic. The average annual precipitation is between 300-600 mm, varying from one location to another. The precipitation falls equally as snow and rain throughout the year.

Terrain

Granitic bedrock is exposed over the majority of the surface. In areas where moraine is

present, it is differentiated on the basis of its morphology (plains, drumlins, etc.). Occasionally, beaches and marine deposits are found in areas previously occupied by the postglacial seas. These low arctic soils differ from subarctic soils by criteria of degree rather than quality. Due to less intense cryoturbation, the stony surface is not as extensive and slopes are better drained. This ecoregion is characterized by dry facies. The soils recognized by Payette (1968) in the basin of the Arnaud River are identical to Ecoregion 1 with Cryosols dominating.

Vegetation

The Centre for Northern Studies at Laval University has undertaken detailed studies in this ecoregion, above and below the tree limit. Generally, the transition between the shrub tundra and the tundra is very diffuse mainly due to the relatively flat relief of the area. In deep valleys, occupied by major rivers such as the Ungava, vegetation is more varied and dense. Lichens, mainly Cladonia sp., dominate the vegetative landscape. They can be found in clusters on bedrock outcrops or as a continuous cover on unconsolidated sediments. Shrubs, mainly Alnus crispa (absent to the northwest) and Betula glandulosa, are sporadically associated with lichen cover on the slopes and confined valleys. In wet depressions, Sphagnum sp., mosses (Drepanocladus sp.), sedges (Carex sp.) and shrubs (Salix cordifolia, Salix reticulata, Betula glandulosa) are much more abundant.

The subdivisions of this region are characterized by alternating bedrock outcrops, beaches, palsa bogs and black and white spruce krummholtz on sheltered sites (Ungava Bay subdivision). Also present is a relatively unbroken rocky plateau (Lac Couture subdivision), a maritime point (Pointe Louis XIV subdivision), a coastal cuesta zone with generally barren hills (Nastapoka Islands subdivision), a rocky plateau of alternating morainal hills (Povungnituk subdivision) and finally, a zone with a high concentration (20%) of lakes (Lac Tassialuk subdivision).

Ecoregion 3

This ecoregion is bordered to the north by the treeline which follows the Aux Feuilles River, in the vicinity of Ungava Bay. Its western and eastern extent closely follows the 58°30'N parallel without reaching either Hudson Bay or Ungava Bay respectively, because of the marine influence on the climate. To the south, the region is limited by the Mélèze River (55°30'N). The relatively flat relief varies in elevation from 100 to 300 m a.s.l. but the difference in relief does not locally exceed 30 m. The total area covered by water is approximately 20% of the ecoregion's surface.

Climate

The growing season is an average of 90 days long with an average annual precipitation less than 600 mm. Payette (1973) defines the climate as both a climatic and pedologic obstacle to the development of the forest vegetation. In fact, in this ecoregion the vegetation only occurs in sheltered sites such as the north slope of bedrock knobs. Everywhere else tundra vegetation dominates, particularly on the barren plateau of Nedlouc Lake just a few metres above the surrounding lands.

Terrain

Granitic bedrock outcrops cover much of this surface. However, in the area of the Bay aux Feuilles, metamorphosed sedimentary and volcanic rocks show a north-south trending foliation. Morainal plains can be found on the plateau whereas, closer to Ungava Bay, the landscape includes palsa bogs, moraine, and bedrock outcrops. Very few localized soil studies have been undertaken in the area. Payette (1973) has defined the major soil characteristics for an area of 100 km^2 near Poste-de-la-Baleine. By order of decreasing surface area, these soils are the lithic phases of Orthic-Regosols, Brunisols, Fibrisols, Gleysols and Podzols. Payette (1973) suggests that the Podzols are found here at their northernmost extension in Canada.

Vegetation

Stunted black spruce and tamarack are confined to sheltered depressions in moist soils accompanied by Sphagnum mosses and heath. In this region the lichen (Cladonia sp.)-heath is quite extensive and is associated with sporadic shrubs (Betula glandulosa, Salix sp.). On bedrock outcrops, arctic herbs, dwarf willows (Salix planifolia, Salix reticulata) and lichens (Cladonia sp., Alectoria sp., Cetraria sp.) can barely survive. The wet depressions, where palsa bogs develop, are colonized by Sphagnum, heath, and graminoids. Payette (1976) has recognized in this area five subunits based on the regional distribution of black spruce and tamarack.

The subdivisions within this ecoregion include a broken rocky plateau (Pointe Le Droit subdivision), a low rocky plateau cut by a deep valley (Rivière aux Feuilles subdivision), a broken plateau rising to the south (Georges River subdivision), a relatively flat plateau (Lac Nedlouc subdivision), and a rocky, morainal plateau (Lac Thévenet subdivision).

Ecoregion 4

This ecoregion is limited to the north and south by the Aux Feuilles River and Grande Rivière de la Baleine, respectively, to the east, and by the Caniapiscau River and Hudson Bay to the west. The tundra is characterized by sporadic clumps of forest vegetation which is usually limited to the most favorable sites. The generally hummocky surface includes portions of highlands to the west where cuestas dip into Hudson Bay. Lakes are abundant and shallow, including Lac Bienville.

Climate

The area benefits from a growing season of 100 to 120 days. The average annual total precipitation is in the order of 500 to 700 mm and is contributed mainly in the form of rainfall.

Terrain

The bedrock is mainly granitic, with the exception of a few sedimentary formations on the Hudson Bay coast. Unconsolidated sediments dominate to the east and are, in large part, of glacial origin (moraines, drumlins and morainal plain). Nearer to the Hudson Bay, fine sediments are concentrated in the valleys (marine clays and sand and fluvial sediments). Payette (1973) from his work in the vicinity of Poste-de-la-Baleine has identified the major soils of this area. On well-drained, sandy sites, poorly developed Orthic Regosols, poorly developed Dystric Brunisols and Podzols are present. The wind action influences the rate of pedogenesis of coastal soils and the formation of soil series inland. The soils are also differentiated by a drainage pattern associated with the terraced topography. Podzols occupy areas where water is readily available, whereas the dryer sites favor the development of Regosols and Brunisols. The area is located at the northernmost extension of the Podzols. Gleysols and Fibrisols are abundant on poorly drained sediments. Organic Cryosols are associated with palsas. Regosols on granitic bedrock are observed to be of a much greater extent than lithic soil phases formed on dolomitic bedrock because of more intense frost action.

Vegetation

The main characteristic of this area is the abundance of lichens (Cladonia sp.) (Gerardin, 1980). They cover 80% of the surface of which 40% supports the growth of black spruce (Plate 2). The remaining area is sporadically covered with shrubs (mainly Betula glandulosa). According to Payette (pers. comm.) the difference, on similar sites, between the treeless lichen tundra with relict trees and the spruce and lichen tundra is simply the temporal variation of climate, which is critical at the treeline. The development of trees over a vast area requires reproduction by scattering of seeds, only possible during the warmer periods of the Holocene. All sites devastated by fire are regenerated into lichen heaths with the remaining tree population reproducing by suckers.

Ducruc and Zarnovican (1976) define an additional land unit bordering the coast. It is characterized by more Arctic conditions prevailing on exposed sites and the presence, in sheltered areas, of white spruce.

The western edge of the ecoregion is represented by a series of cuestas forming rocky hills interspersed by valleys which are partly filled by marine sediments (Manitounuk Islands subdivision). The remaining area of the ecoregion is a plain covered by a variable thickness of moraine (Lac Bienville subdivision).

Ecoregion 5

This ecoregion corresponds closely to the physiographic region of the Whales Lowlands defined by Bostock (1970). It is also located in the same climatic zone as Lac Bienville subdivision of Ecoregion 4. Regional climatic conditions are altered due to a generally lower elevation and gentle north-south slopes resulting from folded metamorphic rocks. Consequently, trees account for only 25% of the surface cover.

Climate

The available data indicate that this ecoregion has similar climate to that of Ecoregion 4. An annual growing season of 100 to 110 days is supported by an average total

Plate 2: The Subarctic is a vast zone where the tundra and the subarctic forest overlap. Parcels of both forest and tundra form a mosaic within Landscape Ecoregion 4.

precipitation of up to 700 mm. Regional climatic differences (wind, calorific balance, etc.) are associated with the closed forest condition present.

Terrain

With the exception of the highlands, the granitic and sedimentary bedrock is generally covered by thick moraine. Morphologically, drumlins trend north-south and ribbed moraines are transverse to the fluting orientation. Peat accumulations partly fill depressions; otherwise materials are sandy and gravelly loam. In the north of the ecoregion, below the marine submergence limit, the upper sandy layer is often reworked. To the south, deep sandy terraces are found in the valleys. The various soil formations previously described by Payette (1973) in the vicinity of Poste-de-la-Baleine also apply to this area. Slight modifications brought about by the different physiography of the area include a greater abundance of Dystric Brunisols, Fibrisols, and Podzols.

Vegetation

Vegetation cover is dominated by a wooded heath of black spruce and lichens (5-25% of surface cover) or open black spruce woodlands (25-40% of surface cover). Slightly elevated surfaces are covered with treeless lichen (Cladonia sp.)-heath and indicate the proximity of Arctic conditions. Palsas are common in poorly drained depressions and reach their greatest extent on the Ungava Bay Lowland.

Numerous bogs and fens where Sphagnum mosses, sedges and heath (Ledum groenlandicum, Chamaedaphne calyculata, Betula glandulosa) and graminoids are prolific and associated with clusters of black spruce. On the better drained slopes, dense shrubs (Betula glandulosa) are also abundant.

To the east of the ecoregion, a geographically detached area (Lac Henrietta subdivision) is characterized by a broken rocky plateau. To the west, the Lac Lemoyne subdivision is a plateau rising in elevation towards the south and covered by thick moraine.

Ecoregion 6

This ecoregion spreads from Kegashka on the north shore of the Gulf of St. Lawrence and east towards the coast of Labrador (Plate 3). These limits are defined by the zone of influence of the cold Labrador current. Physiography here is characterized by a low rocky coast backed by a high and broken plateau. All exposed sites are treeless in favor of a shrub tundra dominated by heath. Along the coast, ombrotrophic bogs occupy the majority of the poorly drained depressions.

Climate

Climate is directly influenced by the proximity of the sea, particularly by constant winds, a high degree of humidity, low variations in temperature, and saline ocean spray. The growing season lasts up to 130 days while the total annual precipitation is greater than 1000 mm, 40% of which falls as snow.

Terrain

Gneiss and granite compose the bedrock which outcrops over extensive areas. Thin, discontinuous and coarse morainal deposits, in places reworked and associated with beaches, cover the slopes, whereas ombrotrophic bogs occupy depressions and sandy terraces found in the valleys. Limited silty-clays of the last marine transgression are found below sandy deposits. The area is included in the extensive Podzol zone, distinguishable by the wide occurrence of indurated soils on sandy surfaces and the abundance of Folisols. The dominant soils are Regosols, Fibrisols and Podzols.

Vegetation

All exposed areas along the coast are covered by a shrub tundra mainly composed of lichens, heath, and krummoltz and prostrate trees. Away from the coastline, about 40-60% of the surface has open forests of black spruce with mosses being prolific in sheltered depressions. Close to 20% of the surface, mainly in depressions, is covered by ombrotrophic bogs where Sphagnum moss and heath abound.

The rocky coast of this region is characterized by barren hills (Kegashka-Blanc Sablon Coast subdivision). The remaining subdivisions are a moderately broken plateau (Lac Musquaro) and the tundra of the Brador Hills subdivision to the east.

Ecoregion 7

The Grande Rivière de la Baleine defines the northern limit of this ecoregion, while the southward extent is delimited by the Grande Rivière. To the east and west the limits are the high plateau of Delorme Lake and Hudson Bay, respectively. It is the dominated by wooded lichen heath (Rousseau, 1968) (Plate 4). The hummocky relief increases in elevation to the east where it reaches the highlands in the vicinity of Delorme Lake. Lakes cover close to 20% of the surface.

As defined by Ducruc et al (1975), the area is represented by three vegetative units based on the distribution of tree species. From west to east, these are dominated by white spruce, black spruce, and an association of black spruce and tamarack is characteristic.

Climate

The annual average total precipitation varies from 600 to 900 mm and the growing season in the area lasts from 110 to 120 days. With the exception of the eastern highlands, no major local physiographic characteristics modify the effects of the regional climate.

Terrain

The major part of the ecoregion is situated on the Canadian Shield were granitic rocks dominate. Nevertheless, localized sedimentary rocks dipping west are found on the coastal edge. Thick glacial moraine over 70 m deep blankets the eastern end of the area, whereas bedrock outcrops are more common towards the

Plate 3: The barren and rocky plateau located in the southern Arctic along the coast of the Gulf of St. Lawrence constitutes Landscape Ecoregion 6.

west, where morainal patches become very localized. Podzols, with characteristics approaching those of Dystric Brunisols on well drained sites, constitute the major soils present. These have a fragic horizon of indurated ortstein which is characteristic of boreal and subarctic areas.

Vegetation

The vegetative cover is defined by a continuous mat of lichens with a series of sporadic black spruce developed into a candelabra pattern. On the more favorable sites, black spruce and mosses (or willows) develop with density greater than 25% of the surface cover. A few groves of jack pine and lichen are found in their early stage of development whereas, under conditions of intense degradation, such as on exposed bedrock summits, lichen heath is present and can be accompanied by arctic and alpine species. The more sheltered slopes of the western end of the ecoregion accommodate a few balsam fir and white birch.

In the west of the ecoregion is a glaciomarine plain covered by moraine where white spruce predominates (Rivière Roggan subdivision). In the centre of the ecoregion, a black spruce dominated area (Rivière Kanaaupscow subdivision) is present on the plateau but broken by wide valleys filled with moraine (Lac Legrand subdivision). To the east, the ecoregion is characterized by a broken plateau covered by variable thicknesses of moraine forming the Lac Delorme subdivision.

Plate 4: The subarctic forest, or more commonly known as the taiga, is sparse with trees distributed in a candelabra pattern on a continuous lichen cover (Landscape Ecoregion 7).

Ecoregion 8

The area is limited to the north and south by latitudes 54° and 52°30'N respectively, to the west by James Bay, and to the east by central massif highlands. The average elevation increases towards the east with respect to a more broken relief. The open forest accounts for 25 to 40% of the surface cover.

Climate

Located immediately south of Ecoregion 7, the climatic characteristics of this ecoregion are similar, except that this area has a slightly longer growing season. There are no major physiographic features to influence the local climate within the unit.

Terrain

All the characteristics of geology, geomorphology, and soil development are similar to those of Ecoregion 7. A notable number of the ombrotrophic bogs are present west of 77°W longitude.

Vegetation

The characteristic vegetation of the area consists of open black spruce forest, where the density of the cover of lichens or mosses varies according to the condition of each site present here. Ducruc et al (1975) recognize three distinct floristic units in this area. These are, from west to east;

(a) the Fort George area, characterized by an abundance of black spruce;
(b) the Sakami area, between 75°30' and 78°30'W longitude which is the equivalent of the Eastmain Shrub Woodland of Hare (1959), characterized by the abundance of white pine groves. The density of trees exceeds 40% of the surface cover on relatively dry sites and is accompanied by an understory of lichens or mosses and Ledum groenlandicum;
(c) the area of Lake Nichicun, east of 75°30'W longitude where jack pine, shrubs

and moss cover are much less dense. Only sporadic black spruce on a cover of lichen develop to 25-40% of the surface cover.

The western part of this ecoregion is represented by a glaciomarine plain with occasional rocky hills (Fort George subdivision). The rising altitude towards the east is characterized by rocky hills and depressions filled with moraine (Lac Sakami subdivision), whereas the eastern part of the region is characterized by a hummocky and broken plateau (Lac Nichicun subdivision).

Ecoregion 9

To the north and south, this ecoregion is limited by 54°N and 52°N latitudes whereas longitudes 66°W and 70°W correspond to the eastern and western limits respectively. The average elevation generally exceeds 600 m a.s.l. with peaks reaching 1000 m a.s.l. The relief is mountainous, particularly in the south of the ecoregion.

Climate

The diverse physiographic conditions of this area influence the regional climate. Consequently, annual total precipitation is in the order of 800 to 1000 mm while the growing season varies from 110 to 120 days. Well vegetated sheltered areas are relatively abundant.

Terrain

Given its central location on the Precambrian plateau, the surficial deposits in this area have a distinct morphology and wide distribution. Bedrock outcrops are few and wasting glaciers have left a very coarse and rounded material in the valleys where Podzols are very common.

Vegetation

According to Gerardin (1980), five vegetation groupings represent 83% of the sampled vegetation in this area. These are: black spruce groves with lichens (Cladonia sp.) on well drained sites; black spruce groves and mosses; black spruce associated with balsam fir; birch groves with club moss which colonize seepage sites; and finally, alpine heath which covers exposed summits.

A thin morainal cover characterizes the northern part of this ecoregion (Lac Opiscotéo subdivision). To the south (Lac Vallard subdivision), the ecoregion is subdivided by rocky hills covered by moraine and depressions filled with hummocky deposits.

Ecoregion 10

This ecoregion includes exposed summits above 1000 m, such as Monts Otiche and Groulx and others not included on the accompanying map, which have a similar climate and vegetation (Plate 5).

Climate

Given the limited surface area of these units and their difficult accessibility, no representative climatological data is available. The climatic conditions are modified by generally colder, severe temperatures, more pronounced temperature variations and wind exposure.

Terrain

Local bedrock is composed of sandstone and quartzite and is frequently exposed. These rocks are a crest within an orogenic zone separating the geological provinces of Grenville and Superior (Avramtchev and Marcoux, 1979). On the surface, thin and discontinuous sediments are mainly represented by a stony moraine. In spite of a harsh climate, frost action is very localized. In order of occurrence, soils are Regosols on outcrops, followed by Regosols and Brunisols mainly on steep slopes and exposed crests. Swamps are few, shallow, of limited extent and feature Humisols. Regosolic, Turbic or Static Cryosols may be present.

Vegetation

The limits of the ecoregion as shown on the accompanying map, include the treeless alpine summits (i.e. Monts Otiche). The slopes are covered by krummoltz and open forests that cover from 40 to 60% of the surface. The main group is composed of black spruce-groves with balsam fir and mosses associated with occasional white spruce. A distinction has been made on the basis of elevation by Gerardin (1980):

Upper elevations: The exposed summits favor the development of a Cetraria nivalis or Rhacomitrium lanuginosum dominated lichen-

Plate 5: In the central part of the Quebec-Labrador peninsula, the prominent Otiches Hills highlight the surrounding forest (Landscape Ecoregion 10). These summits are covered by arctic-alpine tundra vegetation.

heath. Sheltered areas show the development of fir and white spruce krummoltz associated with occasional black spruce.

Lower elevations: Mainly represented by seepage colluvium, they are colonized by black spruce and balsam fir on poorly to moderately well drained soils. On well drained sites, white birch is often replaced by balsam fir groves. Finally, black spruce groves are found on the well drained sands.

The variable bedrock geology of the ecoregion results in two subdivisions. These differences are mainly characterized by anorthosite (Groulx Hills subdivision) and granitic rocks and sandstone (Otiche Hills subdivision).

Ecoregion 11

South of Mont Otiche, is a relatively flat plateau at as average elevation of 800 m a.s.l. comprising the area of Ecoregion 11.

Climate

Ecoregion 11 has a milder climate than Ecoregion 10, immediately to the north. The difference in climate is due mainly to the elevation, which is lower in this area. The amount of precipitation is similar to Ecoregion 10, but with a relatively longer growing season.

Terrain

A drumlinized and hummocky coarse moraine is present over most of the ecoregion. On the plateau surface, a few bedrock hills protrude the areas of thin and discontinuous deposits. The drier areas favor the development of Podzols, whereas in depressions, where water accumulates, ombrotrophic swamps of limited extent develop and are often wooded, with organic or gleysolic soils.

Vegetation

The area is covered up to 60% by balsam fir-black spruce groves with mosses. The degenerated appearance of firs (broken branches, or dead apex) reflects the harsh conditions of this ecoregion (Ducruc and Zarnovican, 1976). Gerardin (1980) identifies the presence of occasional white spruce and white birch.

The landscape ecoregion is subdivided into the Lac Mistastin subdivision - a drumlinized moraine; a plateau where the bedrock is rhyolitic (Lac Hippocampe subdivision), a poorly drained plateau where peat bogs are common (Smallwood Reservoir subdivision), a more mountainous area (Shefferville Hills subdivision), and finally the Lac aux Goélands subdivision.

Ecoregion 12

This ecoregion is limited to the north and south by latitudes 52°30'N and 50°00'N. To the west it spans from Mistassini Lake to longitude 86°30'W at the Ontario border. There, the relief is more pronounced and increases in elevation from west to east. To the east, the hummocky relief is marked by numerous lakes.

Climate

Annual precipitation is in the order of 600 to 800 mm and the growing season lasts from 130 to 150 days. With the exception of the coastal zone, which comes under the moderating effect of James Bay, the climate is continental with marked diurnal and annual temperature variations.

Terrain

While bedrock geology is uniform throughout the ecoregion, it can be subdivided in four areas, based on the geomorphology:

(a) a coastal zone where beaches and shallow fen wetlands alternate;
(b) a relatively flat plain, 80 to 100 km wide, dominated by thick ombrotrophic bogs, which are wooded in the shallower areas and over marine clays;
(c) a hummocky zone where lacustrine clays and ombrotrophic bogs and fens dominate; and
(d) a moraine of variable thickness covering a moderately broken plateau to the east.

Throughout the ecoregion, Podzols are well developed, often with orstein, on well to imperfectly drained coarse sand. Marine and lacustrine clays have Gleysols or Grey Luvisols, and Dystric Brunisols. The organic sites consist of Fibrisols and Mesisols.

Vegetation

Gerardin (1980) has described three vegetation assemblages here. These are: black spruce groves and mosses where lichens are common; on drier sites, lichen, moss, and jack pine groves colonize burned sites. On richer sites birch groves, aspen groves and balsam fir groves are found. A great abundance of bogs cover the clayey deposits of the Barlow-Ojibway glacial lake and glacial Tyrrell Sea areas.

On the James Bay coast, white spruce is associated with balsam fir, and grows in a relatively dense pattern (60 to 80% of the surface cover). All soils having rapid to moderate drainage are blanketed by a continuous moss cover.

The ecoregion is subdivided to the west by a broken rocky plateau (Lac Mistassini West subdivision). To the east, a vast glacio-marine plain with occasional rocky hills (Lac Evans subdivision) is present. Along the James Bay coast the ecoregion is subdivided by low rocky hills (Rupert Bay subdivision).

Ecoregion 13

The ecoregion includes some characteristics of the Lac Mistassini West subdivision of Ecoregion 12 as described by Ducruc et al (1975) and Gerardin (1980). To the east, its limit runs along Mistassini Lake in a northeast to southwest axis and coincides with the 800 mm average annual precipitation gradient.

The major differentiating criteria for this unit are increasing precipitation, more broken relief, and the greatly reduced number of lakes.

Climate

The average annual precipitation varies from 800 to 1000 mm and the growing season spans 120 to 145 days across the ecoregion.

Terrain

Generally, a morainal blanket associated with numerous fluvioglacial deposits covers the ecoregion. Podzols develop on all terrain. Organic soils are localized and of limited extent, and are comparable to those of Ecoregion 12.

Vegetation

The Ministry of Energy and Resources of Quebec (1981) has identified an increase in the precipitation from Ecoregion 12 reflected in a higher and a more closed vegetation cover. The surface cover of the open forests is up to 60% and the average height of the trees is 21 m. Jack pine have a much reduced surface cover (6-15%), trembling aspen are only found sporadically, and balsam fir is common. This ecoregion is a transition zone between a dryer continental climate to the west and a humid maritime climate to the east.

Vegetation groupings include black spruce groves and mosses with occasional balsam fir occupying the dryer sites. On these same sites, forest burns are colonized by jack pine groves, lichens and mosses. On the more favorable sites birch groves, aspen groves and balsam fir groves develop.

This ecoregion is subdivided on the basis of variations in the relief. These include hummocky plateaux (Harbour and Churchill Falls subdivisions), a very broken plateau (Rivière Saint-Paul subdivision), a rocky and rough plateau (Rivière Saint-Augustin subdivision), and a broken plateau combined with a rocky hill complex and depressions occupied by lakes (Lac Mistassini East subdivision). There is also a limited area covered by a varying thickness of moraine where bogs are abundant (Lac Domagaya subdivision).

Ecoregion 14

This vast ecoregion encompasses the upper basins of the Manicouagan and Outardes rivers, the north shore of the Gulf of St. Lawrence and the Laurentian Highlands from Sept-Iles to Havre-Saint-Pierre. Relief is generally broken by deep valleys.

Climate

The climate of this ecoregion is characterized by high precipitation distributed throughout the year; and constant winds influencing the exposed sites of the coast and the summits of the surrounding foothills. In the boreal environment, these conditions contribute to maintaining a diversified vegetative landscape.

Terrain

Based on the geomorphology, two broad divisions exist in the ecoregion. These are:

(a) a coastal strip mainly constituting barren rocky hills, glaciomarine terraces, sandpits and ombrotrophic bogs with circular ponds. The soils, by order of occurrence, are Regosols, Podzols (with orstein mainly on sand), and Fibrisols.

(b) a high rocky plateau broken by deep valleys (Plate 6). The plateau is covered by a thin and discontinuous morainal veneer, whereas valleys are filled by deep sandy terraces. Bogs are limited.

Podzols are widespread on all well to imperfectly drained, unconsolidated sediments. The main characteristic of the area is the marked development of Folisols on well drained bedrock outcrops.

Vegetation

The vegetative landscape has resulted from an interaction of the high precipitation and exposed relief. On dry slopes, forests of variable height (15 to 25 m) and density (40 to 80% of surface cover) have developed. These are either black spruce groves associated with balsam fir and mosses, or balsam fir groves associated with black spruce and mosses. In addition to these, balsam fir groves and mosses, birch groves, and less commonly, trembling aspen groves on seepage slopes are found. On the majority of the dry and rich sites, tall white spruce and white birch are frequently associated with conifers. Exposed sites, common on sub-maritime summits in the vicinity of Sept-Iles, support a stunted forest, with krummoltz, fir, black and white spruce, and arctic-alpine heath. The entire ecoregion constitutes the North Shore subdivision.

Ecoregion 15

The north and south boundaries of this ecoregion are 50°N and 48°N latitudes. To the west, it is limited by longitude 77°W. The relatively flat relief progressively increases in towards the south and the west, where the average elevation is 500 m a.s.l. A few extensive and shallow lakes, such as Matagami and Goélands lakes, break the landscape.

Climate

Of all the ecoregions in the boreal zone of Quebec, this ecoregion is the most continental climatically. The average annual precipitation is 700 to 900 mm with a maximum intensity during the summer months when temperatures show a marked daily variation. The average length of the growing season is 150 to 160 days.

Terrain

The Abitibi Clay Belt of Ontario is an extension of this ecoregion. To the northwest, lacustrine clays form poorly drained plains mainly covered (75% of the total surface) by ombrotrophic bogs. These bogs are set higher in the landscape than the surrounding hydrological network. To the east, with an increase in relief, drainage improves and consequently the surface cover of these bogs decreases to 20%. The improved drainage and enrichment of the water in contact with the clays favor a greater diversity of organic accumulation.

Plate 6: The north shore of the Gulf of St. Lawrence is characterized by major variations in relief within Landscape Ecoregion 14.

While ombrotrophic bogs dominate the landscape, fens are also common close to creeks and small rivers (Grondin and Ouzilleau, 1980). The most common soils in the area are Podzols on sandy deposits and on well to imperfectly drained morainal deposits. On moderately well-drained clays, Grey Luvisols are present whereas Gleysols develop on the imperfectly to poorly drained clays. Finally, although less common, Fibrisols and Mesisols are present in wetlands (Tardif, 1977).

Vegetation

In general, this ecoregion corresponds to the Matagami floristic unit defined by Ducruc et al (1975). Although the forest cover in this area is essentially coniferous, deciduous species are present. They are limited in extent, and appear as dispersed or clumped individuals (Plate 7). The entire ecoregion constitutes the Lac Matagami subdivision.

Ecoregion 16

Located immediately east of the preceding, Ecoregion 16 corresponds to the Chibougamau Lake floristic unit described by Ducruc et al (1975). The slightly higher elevation and broken, hummocky to hilly relief, are outlined by numerous lakes and rivers.

Climate

This ecoregion is relatively more humid than Ecoregion 15. The 800 mm total precipitation isohyet crosses it at its western limit. All the other climatic characteristics are comparable to Ecoregion 15.

Terrain

On the highlands, bedrock is covered by a variable thickness of surficial material locally reworked by post-glacial submergence

Plate 7: The boreal forest in Landscape Ecoregion 15 is mainly coniferous. Hardwood forests are limited to dispersed or clumped individuals.

which presents a sandy surface. This is comparable to the numerous fluvioglacial complexes which fill the valleys. Ombrotrophic bogs are limited to these valleys. The development of Podzols in the area is widespread; their extent is only interrupted by Fibrisols and Mesisols in wetlands on 15% of the total surface.

Vegetation

Forest groupings represent a descriptive synthesis of the Matagami and Chibougamau units defined by Ducruc et al (1975) and Gerardin (1980). Generally, on the well to moderately drained clays and seepage slopes, open forest develops. It's density is variable, covering from 40 to 80% of the surface and the trees reach 15 to 25 m in height.

Most commonly, vegetation is dominated by black spruce groves with mosses or with mosses and Ledum groenlandicum. Occasionally, black spruce groves with Cladonia sp. lichens are present. In the western part of the ecoregion, abundant, poorly drained soils are colonized by black spruce groves with Sphagnum sp. or by Sphagnum sp. and heath.

Following the cutting or burning of such sites, deciduous, coniferous or mixed groupings develop. They are, by order of occurrences, trembling aspen groves, jack pine groves, and birch groves. The more favorable sites see the development of fir groves and white birch groves.

The southern part of the area (the Gouin Reservoir Highlands West subdivision) is more rugged than the northern part (Lac Chibougamau West subdivision). The morainal cover is generally thicker in the latter and favors the development of bogs in depressions.

Ecoregion 17

The western limit of the ecoregion lies north of Lac Saint-Jean and extends eastward to longitude 67°W. From south to north, the area is limited by highlands (e.g. the vicinity of the Pipmuacan Reservoir).

The northern and eastern limits of this unit were established from the physionomic distinction of forests, as compiled and mapped by Lussier (1977). The southern limit was defined by the work of Jurdant et al (1972) and Thibault (1980).

The landscape is broken by deep valleys which are particularly wide in the Pipmuacan Reservoir area. The elevation varies from 300 to 600 m a.s.l., but on the average is 450 m. Many exposed summits reach 600 m at the coastline.

Climate

The average annual total precipitation is more than 1000 mm. This humid ecoregion marks a sharp transition with the more continental areas to the west. Important altitudinal variations create both exposed sites with harsh conditions and sheltered sites at the foot of slopes where climatic conditions are comparable to those of Ecoregion 29 to the south. The growing season is 130 to 150 days.

Terrain

In this area, geomorphology is closely linked to the physiography. The gneissic bedrock gives rise to a rocky relief, barren on the crests and highlands or thinly covered by a discontinous morainal veneer. Thick deposits are concentrated in valleys and depressions and cover approximately 20% of the surface. These are mainly represented by fluvioglacial sands. Essentially, the total surface is covered by either Regosols or Podzols.

Vegetation

The description of the vegetation in this ecoregion is based upon Jurdant et al (1972) for the immediate area of Saguenay-Lac Saint-Jean, from Lussier (1977), from the Ministry of Energy and Resources of Quebec (1981), and from a map of ecological units by Thibault (1980).

The area represents the remaining reserves of mature resinous wood in Quebec. The forests have a surface cover of 60 to 80% and tree heights of 21 to 25 m. However, the broken relief and the numerous bedrock outcrops, mainly to the east, bring about a great variability in the physionomy of vegetation cover.

On dry slopes, black spruce groves and mosses develop with or without a balsam fir association. Balsam fir groves are found on more favorable sites in association with white spruce. Birch groves and, less commonly, trembling aspen groves are the pioneering groups whereas, jack pine groves are limited to the very dry terrain.

The southern part of the area (the Gouin Reservoir Highlands East subdivision) is more

rugged than the northern part (Lac Chibougamau East subdivision). The morainal cover is generally thicker in the latter and favors the formation of bogs in depressions.

Ecoregion 18

This ecoregion is characterized by an upheaved dome which dominates a surrounding plateau. The elevation varies from 500 to 1200 m a.s.l. and the summits are all at an elevation of more than 1000 m. Lakes are not abundant and drainage is mainly concentrated in deep valleys such as the Jacques Cartier River.

Climate

The frost free season is generally less than 80 days long and the growing season is less than 140 days. The average annual total precipitation is 1200 to 1600 mm, the most abundant in Quebec.

Terrain

On the rocky, higher hills, 85% of the surface is covered by a thin moraine whereas the remaining 15% is mainly dominated by bedrock outcrops of gneiss, charnockitic rock and anorthosite. Sandy, fluvioglacial deposits cover the greater part of depressions. Bogs are uncommon and are generally thin, oligotrophic, and wooded. The soils are mainly represented by Ferro-Humic Podzols. Orsteins are occasionally present in well drained sandy soils.

Vegetation

The limits of the ecoregion are derived from Thibault (1980), Jurdant (1968), and Jurdant et al (1972). Included are all the surfaces above an elevation of 500 metres. Jurdant and Ducruc (1980) and Lafond and Ladouceur (1968) describe a distinct peripheral zone to the central highlands. There, forests are composed of balsam fir, black spruce, and mosses associated with white birch. Regeneration of the forest after cutting or burning is by mixed groupings dominated by the white birch, whereas the trembling aspen is much less aggressive. On the central highlands, the black spruce grove associated with mosses is dominant. The exploited species tend to regenerate in fir groves with mosses, particularly Hylocomium oxalis (Lafond and Ladouceur, 1968). The more exposed summits in the area, such as Mont Elie in the Malbaie River basin, are treeless and their alpine vegetation cover is dominated by heath, mosses, sedges, and to a lesser extent, lichens.

The ecoregion is locally mountainous (Mont Tremblant subdivision), where the gneissic bedrock protrudes to the surface. To the north, mountainous and rough plateaux (Upper Laurentians subdivision and Upper Laurentians-Charlevoix-North Shore subdivisions), are composed of charnockitic rock and anorthosite.

Ecoregion 19

This ecoregion embraces the Monts Chic-Chocs and the surrounding highlands characterized by broken relief where the elevation varies from 400 to 1200 m a.s.l. The domed summits of Monts Albert and Jacques-Cartier, which reach 1300 m and are surrounded by steep slopes, make a spectacular landscape.

Climate

In general, the climatic conditions are comparable to those prevailing in ecoregion 21. The growing season is less than 140 days and the average annual total precipitation is in the order of 1200 mm. Given the higher elevation of the summits, alpine conditions are more obvious: violent winds, high daily temperature fluctuations, and frequent summer frost and snow.

Terrain

Throughout the ecoregion, erosion has left its mark. The slopes are steep, and the surficial deposits, mainly morainal, are thin and discontinuous whereas scree accumulations and colluvium are important. According to Tardif (1977), bedrock outcrops and Regosols dominate the soil formations. However, he has also suggested that the surrounding area has the same active processes, with an abundance of Dystric Brunisols and Humo-Ferric Podzols.

Vegetation

This ecoregion has been described by Thibault (1980) and Lafond and Ladouceur (1968). On the high plateaux, dry sites are occupied by black spruce groves with balsam fir and mosses. Following clearing, these regenerate in the same way as on the Laurentian Highlands through balsam fir groves with Hylocomium oxalis. In the lower areas of rich organic soils occasionally cedar groves are found. The exposed areas of the plateaux, mainly on

Monts Albert and Jacques-Cartier, are covered by alpine heath dominated by sedges and lichens with peripheral krummoltz of balsam fir and spruces. In the vicinity of the tree line, the first tree groupings are dwarf balsam fir and white birch groves.

A subdivision of this ecoregion is represented by barren and rocky summits (Jacques-Cartier subdivision). The remaining area (Notre-Dame Uplands subdivision) is a massif forming the foothills of Monts Chic-Chocs (Chic-Chocs Hills subdivision).

Ecoregion 20

The ecoregion is limited to Anticosti Island and is described by Desloges and Emond (1974). Generally, the relief is relatively flat with slopes of 1 to 3% and occasional cliffs up to 120 m high, particularly along the north shore. The elevation is mainly below 150 m a.s.l., but the western and eastern extremities of the central plateau are higher. Numerous rivers have encised valleys or canyons in the soft bedrock of the Island.

Climate

The main regional climatic characteristic of eastern Quebec is cold temperatures with continental traits. Despite its presence within that area, Anticosti Island's distinct location in the Gulf of St. Lawrence brings it under the influence of the Labrador current resulting in a maritime climate. Consequently, the winters are warmer and the summers are cooler than other ecoregions at the same latitude. The growing season is 150 days long and the Island receives an average total of 850 mm of precipitation annually.

Terrain

Limestone, dolomite and a lesser percentage of shale and marble compose the bedrock of the Island. Very localized occurrences of sandstone and conglomerate complete the geology. Apart from the limited extent of moraine on the Island, unconsolidated sediments are the result of *in situ* alteration of the bedrock which has produced relatively thin, silty soils. To the east, bogs are concentrated in depressions where marine clays often occur. Eutric Brunisols have developed on the fine textured alteration material and organic soils are generally classified as Fibrisols.

Vegetation

On Anticosti Island, Desloges and Emond (1974) have defined three ecological units: (a) Balsam fir groves with mosses cover 80% of the surface. These are defined by uniform, resinous groupings characterized by white spruce-balsam fir groves without shrub or herbaceous strata. It is completed by a continuous cover of mosses. (b) There are isolated occurrences of hardwood trees. (c) The presence of pioneer groupings dominated by white spruce contribute to the uniformity of the resinous landscape.

The balsam fir grove and hardwood tree association is limited to a strip at the foot of the northern hillslopes of the Island in rugged terrain.

The abundance of hardwood groupings throughout the area, as extensive homogeneous groupings or as single trees among the resinous trees (up to 25% of the tree cover), constitutes the main floristic trait of the area. The presence of hardwood trees is evident in every stage of the chronosequence.

The characteristic tree association of the area is composed of a tree stratum marked by balsam fir in association with white birch and the American mountain-ash and, less commonly, the red and mountain maples. Mosses are absent, replaced by a sporadic herbaceous cover.

Among these hardwood forests are found white birch, trembling aspen, balsam poplar, red, and mountain maples, American mountain-ash, and black ash. None of these are exclusive to the area, but their presence and proliferation is an indication of a milder regional climate. The unit is characterized by stunted white spruce groves but the surface area covered by this grouping is too limited to be mappable. It is found along the shore of the island on sites exposed to the dominant winds.

The ecoregion covers Anticosti Island, forming a low plateau with eastern and western lowlands and the Iles de Mingan (Anticosti-Mingan subdivision). The remaining area forms a plateau incised by deep valleys (Vauréal Observation subdivision).

Ecoregion 21

This ecoregion consists of a vast and moderately rough, rocky plateau located at the divide between James Bay and the St. Lawrence basin. The landscape appears to be a succession of rounded hills, more pronounced

towards the east. The ecoregion is lozenge shaped between latitudes 47°30'N and 48°50'N and longitudes 72°30'W and 77°30'W. Thibault (1980) defines the ecoregion's limits which include the Laurentian Plateau, the Abitibi Plains and the Trenche and Ashuapmuchuane River Highlands. The description of this ecoregion is derived from Rowe (1972), Lafond and Ladouceur (1968), Jurdant et al (1972), Thibault (1980), Grandtner (1966) and the Ministry of Energy and Resources of Quebec (1981).

Climate

The average annual precipitation of this ecoregion varies from 900 to 1100 mm, and the length of the growing season is 155 to 160 days. Precipitation is more than 200 mm above that of neighbouring ecoregions.

Terrain

Bedrock is composed of gneiss and other rocks of granitic composition, with outcrops covering less than 5% of the surface. Hills are blanketed by a sandy moraine of variable thickness. The more abundant fluvioglacial and reworked material deposits cover close to 15% of the total surface. Generally, these fill all the small valleys and depressions. Ombrotrophic bogs cover 5% of the surface. The geographical setting of the area strongly suggests the existence of a glacial lake during the last ice retreat. Glacio-lacustrine sediments, mainly silt and fine sands, of variable thickness cover the valley floors and lower slopes, particularly to the east of the region (Dionne, 1969).

Vegetation

The ecoregion occupies the north end of the mixed forest zone and is characterized by resinous forest groupings. Boreal forest taxons (hemlock, fir and jack pine) dominate the vegetation cover. These forests are classified as thin, where the surface cover is between 60 and 80%, and the height of the trees reaches 20 to 25 m. The west-northwest limit of the ecoregion coincides with a major humidity gradient.

White spruce is ubiquitous on all well to imperfectly well drained soils, mainly in balsam fir groves and birch groves, and seems to be linked to climatic gradients. Their presence is more evident towards the east (closer to ecoregion 16) whereas the jack pine is only found occasionally. On the vast sandy plains of this ecoregion, many groupings develop. These are, by order of importance: the black spruce grove associated with jack pine and a thin underbrush of mosses, and occasionally of a lichen cover. The frequent forest fires around Lac Saint-Jean have favored the development of trembling aspen and jack pine. Morainal slopes and alluvial terraces are occupied by mixed groupings dominated by white birch, balsam fir, black spruce with trembling aspen, and birch groves, trembling aspen groves and balsam fir groves associated with black spruce. According to Jurdant et al (1972), under dryer conditions these forests evolve towards thin (60 to 80% cover, heights of 21 to 25 m) black spruce groves and balsam fir groves. The white birch-balsam fir grove is confined to richer sites. The same observations were made by Ducruc and Zarnovican (1976) and Gerardin (1980) for the areas of Matagami and Chibougamau located north of this ecoregion. Thibault (1980) classified this ecoregion in the domain of the white birch-balsam fir grove. Lafond and Ladouceur (1968) have defined the area between 47°40'N and 49°N latitude as the climax of the white birch grove, the balsam fir and the white spruce. The greater abundance of balsam fir to the east has been noted by the Ministry of Energy and Resources of Quebec (1981).

The major part of the ecoregion is formed by a broken plateau (Laurentian Plateau and Upper Abitibi Plain subdivision) which is occasionally rocky and smoother (Ashuapmuchuan subdivision). To the southwest of the ecoregion, an undulating and broken plateau is covered by a moraine and a variable thickness of fluvioglacial sediments (Lac Camachigama subdivision). A broken highland area (Rivière Némiscachingue subdivision) and a rocky plateau with a hummocky landscape (Rivière Trenche Uplands subdivision) are also present in this ecoregion.

Ecoregion 22

This ecoregion lies on the foothills of the Laurentians between latitudes 47°30'N and 50°N and longitudes 67°W and 75°W. Overall, the relief is hilly with the exception of a low plateau on the north shore.

Climate

The average length of the growing season is 150 days, but slightly less on the coast. The whole territory receives 900 to 1000 mm of average annual total precipitation. Due to the great variability of relief, the ambient climatic conditions vary from one area to the next. At lower elevations, mainly to the

south, the local climate is clearly warmer and dryer than the higher plateaux (gradients of 200 to 300 degree-days and 200 to 300 mm of annual total precipitation).

Terrain

Precambrian bedrock dominates and is mainly composed of crystalline rock. In the foothills, a thin morainal veneer covers the slopes. This deepens in the lower areas and is discontinuous on the highlands. The valleys of the ecoregion are filled with fluvioglacial deposits. On the coast, between Forestville and Baie-Comeau, deep ombrotrophic bogs are abundant and alternate with sandy marine terraces and rocky hills. The soils are dominated by Humo-Ferric and Ferro-Humic Podzols.

Vegetation

Description of the vegetation of this ecoregion is drawn from the work of Rowe (1979), Jurdant et al (1972) and compilations by Ministry of Energy Resources of Quebec (1981). The limits of this ecoregion integrate the domain of the white birch fir-grove of Thibault (1980) and Jurdant et al (1972). This is characterized by closed forests (60% or more cover and tree heights above 21 m) of fir and black spruce associated with white birch and the absence of jack pine, except on sandy terraces on the coast where they appear locally. Dry hillslopes are colonized by balsam fir with black spruce and mosses or by black spruce with balsam fir and mosses. These associations occur regularly with white birch and white spruce. Homogeneous black spruce stands are found mainly in poorly drained depressions. The regenerating stands are composed of mixed groupings dominated by white birch. Also found, to a lesser extent, are trembling aspen associated with black spruce, balsam fir and white spruce.

The plateau, which constitutes the major part of the ecoregion (Mid Laurentians-Charlevoix-North Shore subdivision), becomes much less broken towards the east (Ferland Highlands subdivision).

Ecoregion 23

This ecoregion covers the Gaspé Peninsula with the exception of Monts Notre-Dame, Chics-Chocs and Jacques-Cartier and the Baie des Chaleurs. A relatively flat and narrow coastal zone differs from the roughly cut plateau featuring a series of large valleys (Matapédia, Cascapédia and St-Jean). Cultivated land is found on the lowlands. On the lower and mid slopes of Mont Notre-Dame, clear cut forests are present.

The limits of the area are derived from Thibault (1980) and include the whole area of transition, with mixed forests dominated by balsam fir and white birch. The vegetation is described from a synthesis of Lafond and Ladouceur (1968), Rowe (1972) and Thibault (1980).

Climate

The average annual total precipitation varies from 900 to 1300 mm while the growing season is 140 to 160 days. From the exposed coastline on the Gulf of St. Lawrence to the protected valleys in the interior, the climatic conditions vary rapidly.

Terrain

Soft sedimentary rocks are subject to active surface erosion in the region. All the rivers are deeply incised and flow in all directions from the high plateaux. The steep slopes of these plateaux are covered by thin, eroded surficial deposits. Soils are made up of residuum although occasionally morainal deposits are present. According to Tardif (1977) the dominant soils are Dystric Brunisols and Humo-Ferric Podzols. Rowe (1972) notes that the Podzols are poorly developed.

Vegetation

On the coast, a thin band of resinous forest is dominated by white spruce and balsam fir associated with white birch, eastern white cedar, tamarack, and trembling aspen. The maritime influence results in a tormented look on trees exposed to the marine winds. In the interior, the forest is mainly composed of coniferous trees whereas deciduous species, although not uncommon, are much less aggressive. Moderately well drained hillslopes are colonized by balsam fir, white and black spruce with Hypocomium sp. (Lafond and Ladouceur, 1968) most often associated with white birch. Also, the eastern white cedar is commonly associated with these groupings. At the periphety of the ecoregion, the presence of yellow birch is particularly evident on dry soils. The white pine is also occasionally found in the region. Lafond and Ladouceur (1968) note large balsam fir groves with

Hypocomium sp. colonizing cut, burned or diseased areas.

A characteristic landscape of this ecoregion is a sandy coastal terrace with occasional bogs (Gaspésie Coast and Iles-de-la-Madeleine subdivision). Inland, the landscape changes to a broken rocky plateau covered by a discontinuous morainal veneer (Lower and Mid Notre-Dame Hills subdivision).

Ecoregion 24

This ecoregion is limited to the north and south by latitudes 48° N and 47° N and to the east and west by longitudes 72° W and 80° W respectively. The generally hummocky relief has an average elevation of 350 m a.s.l. Large and undulating depressions filled with fine sediments are found mainly around lakes and rivers.

The limits of the ecoregion are derived from Thibault (1980), with its eastern limit modified on the basis of a precipitation gradient (the 900 mm total annual precipitation isohyet). The description of the ecoregion draws upon several sources: Rowe (1972), Thibault (1980), Lafond and Ladouceur (1968), Brown (1981), and compilations of the Ministry of Energy and Natural Resources of Quebec (1981).

Climate

The growing season is from 160 to 170 days and the average annual total precipitation is 800 to 1000 mm.

Terrain

A sandy moraine of variable thickness, often discontinuous, covers the hills of this relatively smooth gneissic plateau. Narrow valleys are filled with thick unconsolidated sediments with glacially washed surfaces. Wide valleys, which account for 20% of the total surface area, are filled with deep sand, fluvioglacial gravel and sandy, hummocky, and drumlinized moraine. Fluvial terraces and ombrotrophic bogs are localized and cover less than 5% of the surface. The soils are mainly Humo-Ferric Podzols. Other minor soils identified by Brown (1981) include Ferro-Humic and Humic Podzols, Dystric and Sombric Brunisols, Humic Gleysols, Gleysols, and Organic soils.

Vegetation

This ecoregion represents the southern part of the transition between the deciduous forest of the St. Lawrence Lowland and the boreal forest to the north (Plate 8). Hardwoods, such as yellow birch, sugar maple, and red and white pine are present in the ecoregion. The northern limit corresponds to the extent of these trees. To the west, at the Ontario border, a notable decrease in humidity (200 mm difference) coincides with a major increase of red and white pine groves. To the east, sugar maple and yellow birch occupy higher and well drained slopes. The eastern limit of the ecoregion is marked by a cooler and more elevated area where the meridional species eventually disappear. The southern limit indicates the transition zone between mixed forests dominated by hardwoods and mixed forests with conifers dominating. A number of mixed tree associations are found. These are, by order of importance: white birch and balsam fir with white spruce; trembling aspen; and red maple or an occasional yellow birch. These mainly develop on burned sites. On richer slopes in the south, yellow birch groves with balsam fir, and red spruce are common or the eastern white cedar is favored. The moist soils of the valleys are colonized by groupings of balsam fir and black spruce, among which large, white or red pines and eastern white cedars are dispersed. In that area, hop-hornbeam-maple groves or occasionally the yellow birch-maple grove is confined to upper slopes with a northern exposure.

The majority of the region is underlain by granitic rocks (Laurentians Plateau and Lower Abitibi Plain subdivision), whereas the western extremity is composed of metasedimentary rocks (Noranda subdivision).

Ecoregion 25

The depression formed by the plains of Lac-Saint-Jean including the lowlands of the upper Saguenay River define this ecoregion. The relief is generally flat or slightly hummocky and the ecoregion is bordered by rocky hills. It is characterized by the agressiveness of hardwood tree species.

Climate

The temperate climate of the area is brought about by the local physiography and the presence of the Saguenay River Valley. The average annual total precipitation of 800 to 900 mm is less than that of the surrounding plateau and the temperatures are generally

Plate 8: The area of mixed forest is characterized by the appearance of various southern species of the boreal forest. Hardwood trees are more prominent in Landscape Ecoregion 24.

warmer. The growing season is 165 to 170 days, which is one to two weeks longer than on the plateau. The conditions of the Lac Saint-Jean plain are similar to ecoregion 17.

Terrain

Soil inventories undertaken by the Ministère de l'Agriculture et de la Colonisation of Quebec (Raymond et al, 1965; Raymond, 1971) were useful in describing the soils in this ecoregion. The forested areas were also described from Jurdant et al (1972).

Bedrock is mainly composed of Precambrian granitic gneisses with some Ordovician limestone locally and basic rock intrusions near Lac Saint-Jean. The lowlands are covered by deep marine clays and sand (60% of the total surface) including deltaic sands. In other areas, glacial deposits (generally thin moraine) covers 25%, and alluvium (generally fluvioglacial) covers 5%. A great part of the ecoregion is deforested. Humo-Ferric Podzols and Humic Gleysols are common (Rowe, 1972).

Bedrock outcrops cover 10% of the total surface, mainly in the upper Saguenay where they form an agro-forested landscape alternating with plateaux of gullied clays. Ombrotrophic bogs (5% of surface) are common along the north shore of Lac Saint-Jean.

Vegetation

The ecological land survey of the Saquenay-Lac Saint-Jean area by Jurdant et al (1972) provides description of the vegetation in this ecoregion. This warmer and dryer climatic enclave is uncommon in the boreal environment.

After land clearing and fires, the vegetative landscape of the ecoregion is now mainly represented by transitions. Trembling aspen groves are regularly associated with single red maple or balsam fir and occasionally with black spruce groves, mosses and jack pine, particularly on the moist soils of the plains and along lake and river shores. Dry sandy plains and outcrops are occupied by vast jack pine groves with associated black spruce. On the hillsides, trembling aspen groves, white birch, balsam fir, and black and white spruce on dryer soils are common. The presence of undisturbed groupings throughout the ecoregion make it possible to identify the various stages of evolution of the local vegetation. Red maple-balsam fir groves are characteristic of mesic conditions of the plain and the littoral, whereas black spruce groves and mosses eventually replace jack pine groves on dry soils. The moist and imperfectly drained soils favor the development of black spruce-balsam fir groves. Around the plain on the lower slopes below 300 m a.s.l., the groupings are stable and are represented by yellow birch-balsam fir groves or yellow birch-maple groves on the better sites. Above 300 m a.s.l., the sugar maple and the yellow birch disappear to make room for white birch-balsam fir groves.

The ecoregion is subdivided into a marine sediment plain (Lac Saint-Jean Plain subdivision) with occasional rocky hills where the valleys are filled with eroded clays (Upper Saguenay Highlands subdivision), a more rugged area where fluvioglacial sediments dominate (Lower Saguenay Hills subdivision), and a morainal area (Lac Bouchette Highlands subdivision).

Ecoregion 26

The Appalachian Highlands above 420 m a.s.l. with the exception of the lower Témiscouata Lake basin comprise this ecoregion. It has two areas: the first borders the United States from the municipality of St. Omer in Islet County (47°15'N - 69°45'W) to that of St. Hubert (47°50°N - 69°10'W) in Rivière-du-loup County. The second area is situated on the eastern slope of Témiscouata Lake bordering New Brunswick, and covers vast surfaces of the County of Rimouski. The eastern limit of this ecoregion is noted by Thibault (1980) and extends northward to the Gaspé coast and southward to the highlands of the Gaspé.

Relief varies from hummocky to rough. The average elevation of the area is close to 400 m a.s.l. but it is not uncommon to find peaks above 600 m a.s.l.

Climate

The main factor considered in delineating this ecoregion is the elevation which also influences the climate. The climate gets harsher as one moves up in elevation or towards the east. The coastal lowlands to the north have a cold climate (similarly to the highlands to the south) but are relatively dryer than higher elevations. Annual degree days range from 2000-2300.

Terrain

Bedrock is mainly composed of quartzite and sandstone. More than 90% of the surface is

covered by a variable thickness of loamy moraine. Fluvioglacial deposits are limited to valleys, and organic deposits occur only to a minor degree. Humo-Ferric Podzols are the dominant soil in this ecoregion.

Vegetation

Most of the ecoregion is covered by the yellow birch-balsam fir groves, particularly on the long morainal-covered slopes where drainage is rapid. Yellow birch-maple groves remain on the thin and well drained moraines covering high plateaux. Black spruce groves colonize the areas of rough topography and very shallow surficial deposits.

The poorly drained sands at the bottom of slopes are occupied by the eastern white cedar-balsam fir groves where an occasional yellow birch is found. Poorly drained organic soils are the domain of eastern white cedar groves or black spruce groves which can develop in these environments. Alluvial terraces are covered mainly by yellow birch-balsam fir groves, eastern white cedar, and black ash.

Extensive forest clearing has resulted in a mainly immature forest and the presence of white birch and red maple. The region is subdivided into a moderately broken plateau and foothills (Saint Lawrence River Estuary and Appalachian Highlands subdivisions).

Ecoregion 27

This ecoregion comprises the lowlands bordering Baie des Chaleurs and the Restigouche River, including the foothills. The ecoregion is also identified by Grandtner (1966) and Thibault (1980) who defined four ecological subunits within it.

Climate

The growing season lasts approximately 170 days and the average annual total precipitation varies from 900 to 1000 mm.

Terrain

Bedrock is composed of limestone, shale, siltstone, sandstone, and conglomerate. Sandy terraces occupy the higher relief of the Restigouche River. Hills are covered by a silty, shallow, and discontinuous moraine. To the east, the plains and foothills are covered by clays, which are often gullied, by coastal sand deposits, and by bogs. Soils are dominated by Grey Brown Luvisols, Dystric and Eutric Brunisols, and Grey Luvisols (Tardif, 1977), as well as some Podzols, Gleysols, Regosols, and Organics (Rousseau, 1966).

Vegetation

Because of its location, the ecoregion benefits from a relatively more favorable climate than the surrounding exposed highlands. It is characterized by the presence of yellow birch-maple groves with some beech (Plate 9). The favored location for this grouping is on well-drained hummocks with a warmer microclimate, mainly near the Restigouche River. However, it is not well represented, due to the topography, clayey sand, and often peaty soils.

On the coastal plain, where the land has not been deforested for agriculture, mixed groupings of balsam fir, white spruce, red maple, white birch, trembling aspen and grey birch are characteristic. On the moist soils at the base of slopes, yellow birch occasionally accompanies balsam fir. Red spruce is sporadically found on most of the well- to imperfectly drained sites, whereas black spruce is concentrated on the more abundant poorly drained soils. Eastern white cedar constitutes an important species on organic soils.

The behaviour of the different tree species and groupings is comparable to that of ecoregion 28. It can be distinguished mainly by its proximity to the ocean and the presence of stunted trees on exposed sites. Thibault (1980) distinguishes the ecoregion by a narrow coastal strip of land under the influence of the ocean spray, where vegetation is characterized by balsam fir and white spruce.

Along the coast, the relatively flat lowlands comprise the Baie des Chaleurs subdivision where bogs are common. Inland, the very broken foothills comprise the Rivière Restigouche subdivision.

Ecoregion 28

A wide band which occupies the northern slopes of the Appalachians forms this ecoregion. To the northwest, it borders the lowlands of the St. Lawrence Estuary, and to the south it is limited by the 450 m contour line, around the Appalachian Highlands. However, the ecoregion to the south also includes the valley of Lake Témiscouata up to the New Brunswick border. The whole ecoregion is encompased by the Témiscouata-Restigouche zone of the Great

Plate 9: The forests along the St. Lawrence River, mainly characterized by yellow birch - maple groves and beech, have a mixed character in Landscape Ecoregion 27. Climate and soil factors have favored settlement in these areas.

Lakes and St. Lawrence forest region defined by Rowe (1972).

Relief is more variable as one proceeds toward the interior, where it changes from hummocky to hilly. The elevation varies from 210 to 420 m a.s.l.

Climate

The average annual total precipitation is less than 1000 mm and the growing season is 160 to 170 days. Because of these conditions, the ecoregion is comparable to Ecoregion 23.

Terrain

Bedrock is mainly composed of shale and sandstone with inclusions of quartzite. The majority of the ecoregion is covered by a loamy moraine. Fluvioglacial sands (kames, eskers and outwash plains) are found in most valleys. Organic deposits are also limited, occurring mainly to the northeast along the St. Lawrence Estuary and associated with sandy and clayey marine deposits and, occasionally, with deltaic sediments. Deep Humo-Ferric Podzols are well developed on most of the well to moderately well drained soils.

Vegetation

The forest here is represented by yellow birch-maple groves which occupy the well drained, upper slopes. With the thinning of the deposits on the higher summits, the drainage is more rapid and beech-maple groves take over. On the lower slopes, fir groves with yellow birch are found, favored by greater inputs of water and nutrients through lateral drainage. Poorly drained depressions accommodate eastern white cedar-balsam fir groves and bogs which, in turn, favor the establishment of peaty cedar groves. These extremely poorly drained ombrotrophic environments are colonized by black spruce.

Major streams are bordered by alluvial terraces which support beech groves and elm groves. In these, the proportion of the american elm diminishes with increasing elevation. Rapidly drained fluvioglacial deposits are vegetated with red spruce-balsam fir groves.

Intensive agriculture was once practiced along the margin of the St. Lawrence Estuary low-lands and on the high plateaux along the Trois Pistoles River and those to the west of Témiscouata lake. After these lands were abandonned, they were recolonized by forests dominated by white spruce. However, repeated forest clearings marked the landscape and favored the development of trembling aspen and white birch. Following a forest cut, the yellow birch-maple grove, which occupies morainal veneers, is very fragile and is quickly replaced by balsam fir groves where the red maple or the red spruce are the main accompanying species.

The ecoregion is subdivided into a relatively broken plateau covered by moraine (East Lower and Mid Appalachians subdivision), which progresses into a mountainous area with rounded summits (Summits of the Mégantic Chain and Mont Saint-Magloire).

Ecoregion 29

The limits of this ecoregion are derived from Thibault (1980) but are modified to exclude an area close to Lac Témiscamingue. It extends between latitudes 46°N and 47°30'N and longitudes 70°W and 80°W, respectively. The relief is very broken and the elevation varies from 100 to 500 m a.s.l. Mont Tremblant and the surrounding hills overlook the area by 300 meters and present boreal vegetation characteristics with the summits covered by coniferous forest. Lakes are numerous but, as opposed to areas immediately in the north, total water surface area is limited.

Climate

The average annual total precipitation is below 1000 m and the growing season is 170 to 180 days.

Terrain

Bedrock comprises gneiss over most of the ecoregion and is associated with paragneiss and, occasionally, with sedimentary rocks in the upper portions of the Gatineau and Lièvre rivers. Sandy moraine, the dominant surficial material, is mainly derived from local bedrock. Lacustrine and fluvioglacial sediments occupy the larger valleys whereas small valleys are covered with washed, sandy, and rocky moraine.

In its eastern portion, the ecoregion is in contact with the area invaded by the glacial Champlain Sea; hence, sandy to clayey littoral or deltaic deposits are more common. Brown (1981) noted the abundance of Humo-Ferric Podzols, mainly on well drained deposits. Although not as common, Humic and Ferro-Humic Podzols, Dystric and Sombric Brunisols, Humic

Gleysols, Gleysols and Organic soils are also present.

Vegetation

Lafond and Ladouceur (1968) note that the ecoregion is dominated by the yellow birch-maple grove. Based upon these studies, the ecoregion's boundary was established at Mont Tremblant, determined on the basis of a humidity gradient which corresponds to marked differences in the vegetation. These differences are the presence of basswood associated with maple groves, the abundance of white and red pine groves, isolated pines west of the Lièvre River, and the presence of red oak on the rocky summits. Brown (1981), for the region west of the Lièvre River, defines an area characterized by more vigorous yellow birch, and a second area characterized by more vigorous sugar maple and the presence of beech. Ecoregion 29 mainly corresponds to the latter. The numerous ecological subunits defined by Thibault (1980) within the domain of the yellow birch maple grove are not retained, as such, in this study. On a regional scale, vegetation can also be described within two distinct physiographic zones east and west of the Lièvre River.

Lafond and Ladouceur (1968) note that the ecoregion is characterized by a temperate and relatively dry climate. It is dominated locally by hardwood, mixed, and coniferous forests. Extensive white and red pine groves are often associated with jack pine. The vegetation is characterized by the yellow birch-maple grove which occupies dry slopes. On the summits, oak groves with sporadic pines and red oak-maple groves are present. Oak groves completely disappear to the west of the Domaine River, although they can be found restricted along the Ottawa River.

In the Ottawa River area, Brown (1981) included beech in the stable vegetation association on dry soils. Thibault (1980) subdivided the area according to the presence of basswood and hemlock groves to the south and along the lower Gatineau. To the northwest, the subdivisions are based on a decrease in red oak occurrence.

The limits of the ecoregion correspond closely to the Laurentian Forest Section of Rowe (1972). The ecoregion was also subdivided by Gagnon and Marcotte (1980) into three ecological units. These are based on the presence of basswood and hemlock on the southern border and the occurence of white birch-balsam fir groves at high altitudes in the vicinity of Mont Tremblant. However, basswood is very scarce in the Laurentian Forest Section, mainly concentrated on the alluvial plains along the Saint-Maurice River. Beech are uncommon in these groupings and concentrated on convex and well drained sites.

On dry slopes, yellow birch-maple groves, occasionally associated with beech, and hop-hornbeam dominate. The maple-groves are frequently degraded by repetitive cutting. To the south of the ecoregion, a few individual hemlock and basswood are found throughout these groupings. Steep rocky slopes are covered by yellow birch-hemlock groves and largetooth aspen groves. Sandy valleys are colonized by balsam fir groves associated with yellow birch, red maple, red spruce on moist soils, and red or black spruce and eastern white cedar on moist and peaty soils. On the rocky ground above 400 m a.s.l., red spruce groves cover the summits. The abundant transition groupings are mainly represented by large areas of white or yellow birch and aspen. Locally, dry sandy and level surfaces encourage jack pine development, whereas the moist alluvium of lower valleys are occupied by the black ash. In general, due to its higher altitude, this ecoregion favors the development of boreal vegetation, as opposed to that of ecoregions to the west.

Based upon the geomorphology, landscape setting and vegetation, the ecoregion is subdivided into 15 subdivisions. These are the Mid Laurentians (Mauricie), the Lower Laurentians, the Laurentians, the Northern Lower Outaouais, the Rivières Bersimis and Outardes Lowlands, the Saguenay Hills, the Laurentian Foothills, the Southern Lower Outaouais, the Mid Gatineau, the Mid Outaouais, the Southern Mid Outaouais, Northern Mid Outaouais, the Lac Témiscamingue, the Southern Lower Ottawa, the Northern Upper Ottawa, and the Southern Upper Ottawa.

Ecoregion 30

The ecoregion located on the Laurentian plateau is similar to that defined by Thibault (1980). The relatively level relief with an elevation varying from 150 to 400 m a.s.l., combined with the latitude, contributes to more favorable climatic conditions as opposed to ecoregion 28. The whole ecoregion is settled and used for agriculture and forestry.

Climate

The growing season is 170 to 180 days and the average annual total precipitation exceeds 1000 mm.

Terrain

Bedrock in this ecoregion is mainly composed of shale and sandstone with occasional igneous intrusions. In the East Lower and Mid Appalachians subdivision, bedrock is covered by a continuous silty blanket. Near the Saint Lawrence Estuary, marine sands and clays are found on the surface and are covered by peat in poorly drained areas. Tardif (1977), notes that the soils of the ecoregion, by order of occurrence, are Humo-Ferric Podzols, Dystric Brunisols, Humic Gleysols, Fibrisols, and Gleysols.

Vegetation

The ecoregion is a transition between the Laurentian Forest Section (Rowe, 1972) and yellow birch-maple groves. Yellow birch is dominant whereas basswood is uncommon and disseminated on dry soils. As noted by Thibault (1980), the resinous groupings are abundant and are dominated by balsam fir and yellow birch on moist and humid sites. For the forest zone of the Eastern Townships defined by Rowe (1972), the major characteristic species on these fertile and well drained slopes include sugar maple, yellow birch, white spruce, balsam fir, white pine, and hemlock. The lower slopes are colonized by the less common beech. Throughout the ecoregion, red spruce is found associated with all the above mentioned species. On exposed summits and on shallow soils, white spruce, balsam fir and white birch dominate. In wet depressions, white cedar, tamarack and black spruce groupings are favored. Swamps populated with hardwood species such as the black ash are rare, although the white elm is present. Following a fire or other disruption, aspen, birch and cedar constitute the pioneer associations. In abandoned fields, the grey birch is important where it grows in the company of white spruce, and the largetooth aspen.

The ecoregion is subdivided by the broken plateau of the Western Lower and Mid Appalachians subdivision; the coastal plain of the Upper and Lower Lowlands of the Saint Lawrence Estuary subdivisions; and the relatively broken Appalachian plateau (Eastern Townships subdivision).

Ecoregion 31

This ecoregion is mainly represented by relatively flat lowlands and the foothills between the Laurentians and the Appalachians.

Climate

The growing season is 180 to 190 days, excluding warmer localized microclimates along the St. Lawrence River. The average total annual precipitation is about 1000 mm.

Terrain

The geomorphology of this ecoregion is characterized by various levels of marine and/or fluvial terraces in valleys. Clays, silts, and sands are often covered by ombrotrophic bogs. The foothills are covered by a morainal veneer directly over bedrock.

According to Tardif (1977), the major soils in the ecoregion are Humo-Ferric Podzols, Gleysols, Dystric Brunisols, and Fibrisols.

Vegetation

The ecoregion comprises maple groves (Lafond and Ladouceur, 1968; Grandtner, 1966; Thibault, 1980) (Plate 10). This particular grouping does not consider the regional distinctions in the behavior of the different species such as sugar maple, beech, basswood, and white ash. On the basis of these characteristics, Lafond and Ladouceur (1968), Rowe (1972), and Thibault (1980) defined a series of subunits.

The marked aggressiveness of basswood and white ash characterize the western portion of this ecoregion. Here, beech is relatively less common particularly after major disturbances, contrary to the eastern portion, where the beech reaches its maximum extension. In the Ottawa River basin, a topographical sequence is described by Lafond and Ladouceur (1968). A similar sequence has been noted by the authors in the eastern region on the basis of available data. Yellow birch is frequently found disseminated throughout the various groupings of this area. The forest, has generally been the object of repeated harvesting and consequently now mainly presents transition groupings such, as trembling aspen, white birch, grey birch, and red maple (Grandtner, 1966).

The ecoregion covers a relatively flat lowland with a rocky plateau (Upper Mid Saint Lawrence and Eastern Townships subdivision), a clayey marine plain with occasional morainal patches (Lower Mid Saint Lawrence subdivision), and moderately rugged foothills with rounded hills (Lower Gatineau and Ottawa River subdivision).

Plate 10: The Laurentian maple grove has for a long time been associated with the human environment. These intensively harvested forests have been degraded to the point of now being very sparsely vegetated in Landscape Ecoregion 31.

Ecoregion 32

The most southerly ecoregion of Quebec, this is limited to the north and south by latitudes 46°N and 45°N respectively, to the west by the Ontario border, and to the east by longitude 72°30'W, by flat lowlands, and by the Laurentian and Appalachian foothills near the St. Lawrence River.

Climate

The growing season is 190 to 210 days in the warmer areas such as the Island of Montreal and the Upper Richelieu River. The average annual total precipitation is 800 to 1000 mm. Warmer areas have dryer summers which can occasionally account for poorer agricultural yields.

Terrain

In the Upper St. Lawrence subdivision, bedrock is composed of shale and horizontally stratified Ordovician limestone. Less common Precambrian units are occasionally covered by moraine and thick marine sands and clays. The soils are generally Grey Brown Luvisols and Melanic Brunisols. Locally, Humo-Ferric Podzols and Organic soils are present. This area has been settled and intensively cleared (Rowe, 1972).

Vegetation

This ecoregion varies from a hardwood forest to a mixed forest. The dominant species are sugar maple and the American beech associated with red maple, yellow birch, basswood, white ash, largetooth aspen, red oak, and white oak. Local individuals occur of white oak, beech, grey birch, rock elm, Carolina yoke-elm and bitternut hickory. The white elm dominates in settled and cultivated areas. On fluvial deposits in valleys, one finds walnut, eastern cottonwood, and the red elm. Throughout the ecoregion, small homogeneous groupings occur on fertile and fine textured soils of the lowlands with black and silver maples. The poorly drained depressions often support bogs populated by hardwoods, mainly the black ash.

In general, on deep and calcareous soils, hardwood forests develop and on the more acidic, eroded and shallow soils, coniferous forests of eastern hemlock, white pine, white spruce, and balsam fir prosper. The coarse textured soils usually support both white and red pine groupings. Wet sites favor the development of black spruce or the eastern white cedar. The latter is also found on dry and rocky sites. Following fire, the pioneer groupings are dominated by aspen and white birch.

This ecoregion is subdivided by a glaciomarine plain and terraces (Montreal Island and Upper Richelieu subdivision); and by an eroded plain (Saint Lawrence Plain and Mid Richelieu subdivision).

4.0 LANDSCAPE ECODISTRICTS

4.1 Introduction

Synthesis of information from the James Bay Territory, Nouveau-Québec, and Southern Quebec has resulted in mapping and description of 897 landscape ecodistricts. Since some of these descriptions have more than one map unit, a total of 996 polygons are presented on the accompanying map in the back pocket of this report. These ecodistricts vary significantly in size from the three areas of Quebec as outlined in section 2.0 due to variations in available information and also due to regional variations in terrestrial characteristics. The following section presents the outline of a simplified ecodistrict legend, developed to describe these units, as modified from Gilbert et al (1981). These data are presented in tabular form in Appendix 1 of this report.

4.2 Data Base Legend

Map unit identifiers for each ecodistrict and ecoregion on the accompanying maps are linked to their descriptions in Appendix 1 by the following alphanumerical system:

- each ecoregion is numbered from 1-32;
- two or three alphabetical letters (i.e. AA) identify each subdivision of these ecoregions; and
- a three digit number (i.e. 000) is given to each ecodistrict. These are arranged by ecoregion subdivision. Maps of these ecodistricts and ecoregions are presented at a scale of 1:2 500 000 in the back pocket of this report.

ECODISTRICT DESCRIPTORS

The legend for ecodistrict descriptions is presented in the following order:

- ecodistrict number
- elevation
- relief

- geomorphology
  - . surficial materials
  - . surface expression
- geology
- vegetation
  - . dominant classes
  - . surface disturbance
- aquatic ecosystems
  - . shoreline characteristics
  - . land/water percentages
  - . lake size
- ecodistrict location.

ECODISTRICT NUMBER

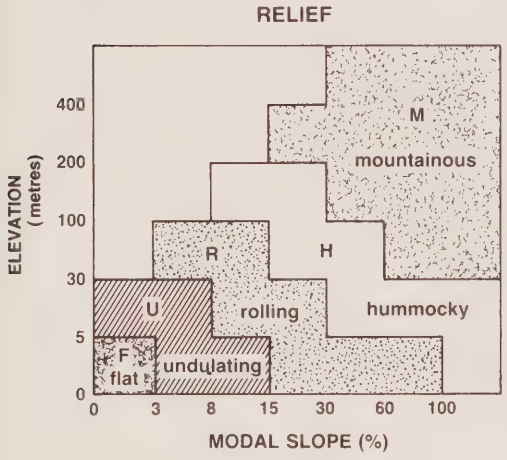
Each map polygon is given a unique number ranging from 1 to 996 encompassing all the ecodistricts of Quebec.

ELEVATION

Elevational ranges in 100 m units (i.e. 2-5 indicating 200-500 m) in each ecodistrict are given. These are estimated from topographical maps at 1:1 000 000 scale. In a few cases, where it was thought to be significant this estimation is made to 50 m.

RELIEF

Relief is evaluated on the basis of five categories established from topographic maps at 1:250 000 scale and the diagram below.



This descriptor takes into account the average slope present and the differences in elevation. It is expressed by a letter, or letters, accompanied by an exponent indicating the proportion of the surface of the ecodistrict included in the respective category (on a scale of 1-10).

GEOMORPHOLOGY

The nature and expression of primary, secondary, and tertiary surficial deposits are represented by up to three columns in Appendix 1 by a series of numerical and alphabetical symbols. The numbers of the lower line show the relative proportion of each deposit. The symbols used in both categories are as follows:

SURFICIAL MATERIALS

1 - Glacial deposits, differentiated or non-differentiated;
2 - Fluvioglacial deposits;
3 - Deltaic deposits;
4 - Glaciolacustrine sediments, generally fine clays and silts;
4*- Glaciolacustrine fine sandy, and variably textured fluvial or alluvial deposits;
5 - Marine clays (Glacial Tyrrel, Laflamme and Champlain Seas);
5*- Marine sands of variable thickness (>2m) occasionally rocky or overlying clays;
6 - Littoral sands and/or gravel;
7 - Bogs;
7*- Fens;
8 - Colluvium, and slope altered debris;
9 - Aeolian deposits;
0 - Bedrock; and
0*- Altered bedrock.

SURFICIAL EXPRESSION

A - Bedrock Influenced: applied to various deposits (1, 4, 4*, etc.) that, even though more than a metre thick, are too shallow to obliterate the bedrock configuration. Bedrock outcrops in a few areas and drainage is often modified by the underlying bedrock.

D - Drumlinoid: can include reworked drumlins.

E - Eroded: mainly applied to recent clay plains dissected by fluvial action, and occasionally, characterizing other sediments.

H - Hummocky: applied to deposits to indicate a particular morphology, such as hummocky or disintegration moraine. It can also take on very specific connotations when applied to particular deposits. For

Table 2: Bedrock Geology Categories in Quebec

SL: Saint Lawrence Lowland

Lower Ordovician

1. Sandstone and dolomite

Middle Ordovician

2. Limestone and sandstone, shale

Upper Ordovician

3. Shale and sandstone (flysch)

4. Red shale, sandstone, gypsum

Silurian

5. Limestone and Shale

Cretaceous

6. Alkaline intrusions (Monteregians)

AP: Appalachians

Taconic

Late Precambrian Cambrian-Ordovician

1. Marine sedimentary rocks (slate, schist, phyllite, chlorite schist, shale, sandstone, conglomerate, limestone, dolomite, greywacke, chert)

2. Continental volcanic rocks (basalt)

3. Marine volcanic rocks, occasionaly metamorphosed

4. Ultramafic rocks (ophiolite) and gabbro

Acadian

5. Marine and Continental sediments (sandstone, conglomerate, siltstone, shale, limestone, quartzite, calcarenite, dolomite)

6. Volcanic rocks (andesite, basalt, rhyolite)

Devonian

7. Intrusives (granite, diorite, gabbro)

Post-Acadian

Permo-Carboniferous

8. Continental sediments (conglomerate, sandstone, shale)

Cretaceous

9. Alkaline intrusions (Monteregians)

GR: GRENVILLE

1. Non-differentiated gneiss (paragneiss, orthogneiss, some amphibolites, migmatites)

2. Paragneiss, some amphibolites

3. Mafic and ultramafic rocks, orthoamphibolites

4. Anorthosite, anorthositic gabbro, gabbro

5. Charnockitic rocks (mangerite, jotunite, farsundiorite)

6. Granitoid rocks with biotite and/or hornblende (granite, syenite, monzonite, granitic gneiss)

7. Alkaline intrusions

8. Charnockitic gneiss

CH: Churchill

Archean and Proterozoic

1. Foliated granite, granitic gneiss, non-divided granites, paragneiss, migmatites. Includes the Archean basement and more recent proterozoic rocks (mainly granitic gneiss and paragneiss)

2. Granodiorite, granite and related intrusive rocks

Lower Proterozoic

3. Sedimentary rocks (dolomite, sandstone, greywacke, siltstone, shale, slate, chert, conglomerate, breccia)

4. Lavas and pyroclastic mafics, little felsic lavas with metamorphosed equivalent (amphibolite, schist, gneiss)

5. Gabbro and ultramafic rocks

SV: Superior

Archean

1. Intermediate and basic lavas, amphibolite, few sedimentary rocks with occasional thin bands of felsic volcanic rocks

2. Rhyolite and felsic pyroclastic rocks

3. Metasedimentary and pyroclastic rocks: metagreywacke, tufs, slate, schist, quartzite, some limestone, iron formations, anatexis white granites associated with metagreywacke

4. Anorthosite, anorthositic gabbro, gabbro (bedded complex)

5. Diorite, gabbro and ultramafic rocks: peridotite, pyroxenite, serpentinite

6. Quartzitic diorite, granodiorite, tonalite, trondhjemite, foliated granites, granitic gneiss more or less hybrid, non-differentiated granites

7. Massive granitic rocks containing sodic and potassic feldspars: granite, monzonite, granodiorite, syenite, granite and granitic oligoclase grey gneiss

8. Charnockitic rocks: pyroxene rocks, granitic gneiss and pyroxene granite

Proterozoic

9. Sandstone, conglomerate, greywacke, argilite, quartzite, dolomite

Mesozoic and Paleozoic

10. Mesozoic: red sandstone and siltstone;
Silurian: limestone, dolomite, siltstone;
Ordovician: limestone and sandstone, volcano-sedimentary rocks

FE: Ferriferous Formations

example, "2H" generally designates kames, "5H" is applied to an intensively eroded clay plain with only a few remaining hummocks, and "7H" symbolizes palsas. This symbol can also be applied to consolidated bedrock "0H" for rounded granitic and gneissic outcrops of the Canadian Shield.

L - Talus: most often used for colluvium which accumulates at the base of valley slopes.

N - Nonstructured: applicable mainly to organic deposits.

P - Plains: mainly used to describe fine sediments on plains such as marine or lacustrine silts and clays.

R - Ridged: characterizes DeGeer moraines, occasionally ribbed moraines (1R), and eskers (2R). When applied to bedrock (0R), it designates cuestas such as along the coast of Hudson Bay; metasedimentary bedrock ridges; and metamorphic rocks of the eugeosyncline belt of Ungava, central Quebec and Labrador as well as the Appalachians.

S - Structured: applied to some organic deposits such as string bogs but does not include large bogs of the North Shore of the Gulf of Saint Lawrence which are classified as nonstructured.

T - Terraced: applied to kame terraces (2T), alluvial terraces (4*T) or to relatively recent marine beaches (6T).

V - Veneer: characterizes deposits of less than a metre thick. Bedrock outcrops are common and the drainage is quite variable. When applied to organic deposits, it defines the thickness down to underlying sediments and not necessarily the bedrock as in the case of other deposits.

GEOLOGY

The bedrock categories used in Appendix 1 are shown on Table 2 as drawn from the geological map of the Province of Quebec (Avramtchev and Marcoux, 1979).

VEGETATION

Vegetation is described according to the nature, the proportion, and the dominance of the species or facies comprising each ecodistrict. The vegetation class symbols used are listed in Table 3.

Table 3: Vegetation Classes

VEGETATION CLASS	SYMBOL
Closed Forest (>60% cover)	
- hardwood	FR
- resinous	FF
Open Forest (25-60% cover)	
- hardwood	fR
- resinous	fF
Wooded Heath (<25% resinous)	LB
Krummoltz	KR
Shrubland	A
Grassland	H
Moss Cover	MU
Lichen Cover	LI
Barren	DE

In southern Quebec, forestry inventory maps showing the various stages of development were used to improve the precision of these vegetation groupings. These categories are: "m" for mature, "j" for immature, and "r" for regeneration, expressing their respective proportion of surface cover.

SURFACE DISTURBANCE

Disturbances including burned areas (Br), cultivated (Ct), fallow (C), and urbanized (Vi) are identified accompanied by a coefficient for surface coverage.

AQUATIC ECOSYSTEMS

Shoreline characteristics: applied to all lacustrine and marine shorelines. The type of valley in which rivers flow is defined. The symbols and categories used are presented in Table 4.

Land/water percentages: the ratio between land surface versus aquatic surface area is expressed to the first decimal. This ratio is only applied to freshwater, excluding all saltwater (i.e. within ecodistrict borders but not beyond the coastline where applicable). Along the Saint Lawrence River, the freshwater limit is established at the eastern end of Ile d'Orléans which corresponds to both the maximum inland extension of saltwater and the head of the Estuary. Therefore, the land/water ratio for ecodistricts 33, 51, 52 etc. does not take into account the surface area of saltwater of the Estuary. On the other hand, ecodistricts 21, 22, and 47 do

Table 4: Shoreline Characteristics

CLASS	CATEGORY					
	MARINE		LACUSTRINE		FLUVIAL	
Cliff	Cliff	CAM	Cliff	CAL	Gorge	CAF
Cliff + talus (0-30%)	Cliff + talus	CBL	Cliff + talus	CBL	Deeply incised valley	CBF
Talus + cliff (30-60%)	Talus + cliff	CCM	Talus + cliff	CCL	Deeply incised valley	CCF
Talus (60%)	Talus	COM	Talus	COL	Incised valley	CDF
Rocky hills	Rocky shore, raised beaches	HRM	Rocky hills	HRL	Rocky valley, fluvial valley deposits	HRF
Hills	Colluvium shore, narrow beaches	HCM	Hills with colluvium; narrow beaches locally, morainal covered hills	HCL HTL	Incised valley, fluvial valley deposits	HCF
Rocky plain and peat and/or beaches and/or fluvial deposits	Low rocky shore, beaches, peat, fluvial complex	PRM	Rocky plateau, peat accumulations south of 58°N	PRL	Shallow rocky valleys, fluvial valley deposits	PRF
Rocky plain	Low rocky shore in front of cliff, no beaches	PCM	N/A		N/A	
Plain and talus	Large beaches in front of talus	PSM	N/A		N/A	
Morainal plain	Morainal plain	PTM	Morainal plain; local beaches associated with fluvioglacial complexes	PTL	Fluvial complexes	PTF
Marine plain	Emerged marine deposits, non-modified by littoral processes	PMM	Clay plain, frequent peat contacts and narrow beaches locally	PML	Banks with talus; frequent, recent fluvial complexes	PMF
Raised beaches	Successive beach crests (often included in PSM or BCM talus near the bank)	BRM	N/A		N/A	
Recent beach complex	Beach + littoral spit, lagoons, dunes, etc.	BCM	N/A		N/A	
Fluvial complexes	Mouth of rivers and associated landforms	RFM	N/A at this scale		Key fluvial complexes	RFF

take into account the surface area of the freshwater of the Saint Lawrence River.

Lake size: these are expressed in four categories and indicate the average surface area of the lakes within each ecodistrict. These categories are:

Average Lake Size	Symbol
Less than 1 ha	0
From 10 to 99 ha	1
From 100 to 999 ha	2
More than 1000 ha	3

ECODISTRICT LOCATION

Identification of the National Topographic Survey (N.T.S.) map sheet at the scale of 1:250 000 is given. Also, the longitude and latitude recorded at the approximate geographic centre of each ecodistrict polygon is noted.

5.0 DISCUSSION

This report provides two levels of description for an ecological land survey of Quebec: landscape ecoregions and landscape ecodistricts. The holistic approach of both levels makes the data base a valuable tool to gain insight into the interactive parameters that make up the ecological subdivisions of the province. At the regional level, landscape ecoregions differentiate vegetation associations which have evolved in response to climatic variation and, to a lesser degree, the bedrock and associated surficial deposits and soils. At this scale of perception, applications of the information are most suited to the broad regional perspectives and as a starting point for the more localized view. The more detailed scale, provided by landscape ecodistricts, is more area specific thus providing a scale suited to applications such as landscape planning and environmental assessment. In most cases, ecodistricts are a smaller land unit within a broad ecoregion. However, some ecodistricts may be larger in total area than some ecoregions in other areas. For instance most of the ecodistricts in northern Quebec are larger than several of the ecoregions along the Saint Lawrence or Saguenay River areas.

The major characterizing parameters used in this study for landscape ecodistricts include vegetation type, relief, elevation, geology, geomorphology and water. Taken together, these variables constitute a dynamic system which is in a state of delicate equilibrium. Change in any one of these variables may create a change in the others so that the equilibrium cannot be restored, and the ecological makeup of the system is altered. The parameters utilized in each case depend as much on the data sources as on scale and complexity. A decision is made regarding every parameter's variation, and relative weighting to other factors to determine the creation of an ecodistrict unit. Elevation change may often contribute to create additional small or linear ecodistricts, but these at some scales cannot be mapped and must be complexed. Furthermore, the nature of the boundaries themselves must be regarded as flexible: they can depict abrupt changes as well as gradual ones. No differentiation was made between these two types of boundaries on the map presented. For example, the relatively rapid change in elevation in the Notre-Dame Hills on the Gaspé Peninsula has a profound effect on the vegetation. This change is important enough to create units that crown the top of these hills. Conversely, a gradual lateral change from rolling morainal topography to flat clay plains calls for a gradual division. The ecodistrict delineates the dominant landscape on either side of the boundary, without attempting to specify the nature of the change or necessarily its "precise" geographic location.

The ecological land survey approach to land classification is different from monothematic mapping techniques such as in forestry, geology, geomorphology, and soils. As such, the maps presented in this report provide an integrated, holistic basis for planning issues or impact studies that involve several parameters. For studies that involve multiple parameters, such as acid precipitation sensitivity assessment, the integrated approach is essential. An associated report by Li (1985) (Part B of this report) illustrates the versatility of this integrated data base with specific application to ecosystem sensitivity to long range transport of airborne pollutants. An additional recent study by Rubec et al (1984) has applied ecodistrict information as a mapping framework for land cover associations identification and mapping. Similar applications in other regions of Canada where ecodistrict data bases now exist abound.

The ecological land survey of Quebec, as compiled in this report, provides for the first time a comprehensive environmental data base for the entire terrestrial ecosystem of the province. It has been derived from a series of associated studies which utilize a common mapping philosophy, a common

classification system, and common data sources. It forms a practical, geographically complete source for regional and subregional environmental assessment and is compatible with other regional and national environmental data sets currently in preparation by Environment Canada (Rubec and Wiken, 1983).

Naturally, this report cannot be all things to all people. It will not, for instance, provide data suitable for site specific applications. More detailed "ecosection" or "ecoelement" surveys, carried out within the ecological land survey framework, and mapped at scales of 1:10 000 to 1:50 000 would then be appropriate (Canada Committee on Ecological Land Classification, 1979a). Benchmark studies such as these might result in subsequent modifications and redefinition of some of the ecological land unit boundaries presented in this report. Indeed, this is expected since subregional data sources for this study have often been fragmented, with limited resources for supportive field surveys. It is our hope that the Ecological Land Survey of Quebec will contribute to refinements in the wise use of the land resources of Quebec and support environmentally sound management procedures for current and future generations, as envisionned by ecologists such as the late Michel Jurdant in his book Le Défi-Écologiste (Jurdant, 1984).

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APPENDIX 1

ECODISTRICT DATA BASE

Ecological Region / Subdivision / Ecodistrict	Elevation (× 100 m)	Relief	Geomorphology	Geology	Vegetation	Perturbation	Land-water Ratio	Size of Lakes	Size of Rivers	Shore Characteristic	Localization: Map	Localization: Longitude	Localization: Latitude

ALi : Laurentian Plateau and Abitibi Plain (lower)

78	0-6	U R / 6 4	4 P / 4	4 E / 3	4*P 1A / 3	SU $7^4 3^3 6^3$	FM 3 FR 3 FF 2 / j&r j j&r	C^2	9/1	3	NA	PML	31M	79°10'	47°40'
79	0-6	H / 10	1 V / 6	1 A / 4		SU $7^8 3^2$	FF 4 FM 4 FR 2 / r m&j j	–	10/0	NA	NA	NA	31M	79°20'	47°50'
80	2-5	H R M / 5 3 2	1 A / 4	1 V / 4	2 H / 2	SU 7^3_3 GR $6^3_2 2^2_1 2$	FR 5 FM 4 FF 1 / j&m m&j j&m	–	9/1	2	NA	HTL	31N	77°45'	47°25'
81	2-5	F U / 6 4	7 N / 6	4*P / 4		SU $7^5 3^5$	FR 7 FM 2 MU 1 / j&r m&j	–	9/1	3	NA	PML	31N	77°40'	47°45'
82	3-6	R U / 5 5	2 H / 5	1 H / 5		GR $6^5 1^3 2^2$	FM 5 FR 4 FF 1 / m&j m&j j	–	9/1	3	NA	HTL	31M	78°00'	47°20'
83	3-6	H / 10	1 A / 5	1 V / 5		GR $6^5 2^3 1^2$	FM 7 FF 2 FR 1 / m m&j m	–	10/0	NA	NA	NA	31M	78°10'	47°10'
84	2-5	R U / 6 4	2 R / 10			SU 7^{10}	FR 4 MU 4 / j&m	Ct^2	10/0	NA	NA	NA	31N	77°45'	47°50'
85	2-5	R U H / 6 3 1	1 V / 5	1 A / 4	1 H / 1	GR $6^5 1^5$	FM 6 FR 3 FF 1 / m&j m&j j	–	8/2	3	NA	HTL	31N	77°10'	47°30'
86	2-5	U R F / 5 3 2	1 V / 5	2 H / 3	7 N / 2	GR $1^6 6^4$	FM 5 FR 4 FF 1 / m&j j j	–	7/3	3	NA	PTL	31N	76°50'	47°25'
87	2-5	R U H / 6 3 1	1 V / 5	1 A / 4	1 H / 1	GR $2^5 6^5$	FM 7 FF 2 FR 1 / m&j j j	–	7/3	3	NA	HTL	31N	76°30'	47°10'
88	2-6	H R / 6 4	1 V / 6	1 A / 4		GR $2^4 6^4 5^2$	FM 7 FF 2 FR 1 / m&r j&m&r j	–	10/0	NA	NA	NA	31N	76°15'	47°15'
89	2-5	H R U / 5 3 2	1 V / 5	1 A / 3	1 H / 2	GR $6^5 2^3 3^2$	FM 7 FR 2 FF 1 / m j j&m	–	9/1	3	NA	HTL	31O	75°40'	47°30'
90	2-6	H R U / 5 3 2	1 V / 4	1 A / 3	1H 2H / 3	GR $6^5 1^3 2^2$	FM 6 FF 2 FR 2 / m&j m&j j	–	10/0	NA	NA	NA	31O	75°00'	47°15'
91	2-5	R U / 6 4	2 H / 6	1 H / 4		GR $2^6 1^4$	FM 6 FF 2 FR 2 / m m r&j	–	7/3	3	NA	HTL	31O	74°10'	47°20'
92	5-8	H R / 6 4	1 V / 6	1 A / 4		GR $8^6 2^4$	FM 4 FF 4 FR 2 / m&j m j	–	10/0	NA	NA	NA	31J	74°25'	47°00'
93	2-5	R U / 6 4	2 H / 6	1 H / 4		GR $1^5 2^3 8^2$	FM 4 FR 3 FF 3 / j&m j&r j&m	–	9/1	3	NA	HTL	31P	73°50'	47°10'
94	2-6	H R / 6 4	1 V / 5	1 A / 3	O / 2	GR $1^4 2^4 8^2$	FM 5 FF 3 FR 2 / j&m&r j&m&r j&r	–	10/0	NA	NA	NA	31P	73°10'	47°40'
95	1-5	R U / 6 4	4*T / 6	1 V / 4		GR $2^5 1^5$	FM 5 FR 3 FF 2 / j&m r j	–	10/0	NA	NA	NA	31P	72°45'	47°50'
96	2-5	H M R / 5 3 2	1 V / 5	1 A / 3	2H 4*T / 2	GR $6^5 5^3 1^2$	FF 8 FM 2 / m&j m	–	10/0	NA	NA	NA	31P	72°10'	47°10'
177	2-5	H R / 6 4	1 V / 6	1 A / 4		SU $3^5 1^3 7^2$	FR 7 FM 1 FF 1 / j&r r&j j&r	Ct^1	10/0	NA	NA	NA	32D	78°30'	48°15'
178	2-5	U F H / 5 3 2	4 P / 5	7 V / 3	1 V / 2	SU $3^6 7^4$	FR 7 fR 3 / j&r j&r	–	9/1	3	NA	PML	32D	78°00'	48°00'
179	2-5	F U / 6 4	7 N / 6	4*P / 4		SU $3^7 2^3$	MU 5 LB 1 FR 4 / j&r&m	–	9/1	3	NA	PML	32C	77°00'	48°00'
234	2-5	U R / 6 4	7 N / 6	5 E / 4		SU $3^5 2^3 1^2$	FR 7 FM 3 / j j&r&m	–	10/0	NA	NA	NA	32D	78°50'	48°15'
245	2-5	R U / 6 4	5 E / 5	5 P / 3	7V 1V / 2	SU $1^7 7^3$	FR 4 FF 3 FM 1 / j r&j j&r	$C^1 Br^1$	9/1	3	NA	PML	32D	78°00'	48°20'

ALs : Laurentian Plateau and Abitibi Plain (upper)

180	2-5	U R / 6 4	1 A / 5	7 N / 3	4*P / 2	SU $1^4 7^3 3^3$	FR 6 FM 2 MU 2 / j&r m	–	7/3	3	NA	PTL	32C	77°10'	48°05'
181	2-5	U R / 6 4	1 A / 5	4*P / 3	7 N / 2	SU $1^5 6^3 7^2$	FR 5 FM 3 MU 2 / j&m m&r	–	10/0	NA	NA	NA	32C	77°00'	48°10'
182	2-7	H R / 6 4	1 V / 5	1 A / 4	2 H / 1	GR $1^6 6^3 8^1$	FR 3 FM 6 FF 1 / m&j m&j j	–	10/0	NA	NA	NA	31O	75°50'	47°50'
183	2-8	H R M / 5 3 2	1 V / 5	1 A / 4	2 H / 1	GR $8^5 2^3 1^2$	FR 6 FM 2 FF 1 / j&m&r m&j&r j&m	Ct 1	10/0	NA	NA	NA	32A	74°00'	48°00'
184	2-6	H / 10	1 V / 6	0 / 4		GR $1^6 5^4$	FR 8 FM 1 / m&j r&m	Ct 1	10/0	NA	NA	NA	32A	72°40'	48°15'
244	2-5	R U / 6 4	1 V / 5	4*P / 3	4 P / 2	SU $1^5 7^3 6^2$	FR 9 FM 1 / m&j m	–	10/0	NA	NA	NA	32C	77°00'	48°25'
248	2-6	H R / 6 4	1 V / 6	1 A / 4		SU $6^6 1^4$	FR 8 FM 1 / j&m m	Ct 1	10/0	NA	NA	NA	32C	76°45'	48°25'
249	2-5	R U / 6 4	1 A / 5	1 V / 3	4*P / 2	GR 1^5 SU 6^5	FR 8 FM 2 / m&j r&m	–	9/1	3	NA	HTL	32C	76°05'	48°30'
250	2-5	R U H / 5 3 2	1 H / 4	1 A / 3	7N 2H / 3	GR $1^6 6^4$	FR 9 FM 1 / j&r&m m&j	–	6/4	3	NA	HTL	32B	75°00'	48°20'

AN : Anticosti-Mingan

253	0-2	U R / 6 4	6 T / 5	7 V / 4	0* / 1	SL $4^8 5^2$	FR 9 MU 1 / j&r	–	10/0	NA	NA	PRM	22H	64°10'	49°55'
254	0-2	U M / 6 4	0* / 4	6 P / 4	7*V / 2	SL $4^8 5^2$	FR 9 MU 1 / j&m	–	10/0	NA	NA	NA	12E	64°00'	49°47'
255	0-2	R F / 6 4	0* / 5	7*V / 3	6 V / 2	SL $5^8 4^2$	FR 9 MU 1 / m&r&j	–	10/0	NA	NA	PRM	12E	63°40'	49°40'
256	1-4	U F / 6 4	1 H / 7	2 R / 3		SL $5^5 4^5$	FR 3 MU 2 / m&r	Br 3 Ct 2	10/0	NA	NA	NA	12E	63°00'	49°35'
257	1-4	U H / 5 5	0* / 5	0 / 3	4*T / 2	SL 5^{10}	FR 10 / m&j	–	10/0	NA	NA	NA	12E	63°10'	49°25'
258	0-1	F R / 6 4	6 T / 4	7*V / 4	0* / 2	SL 5^{10}	MU 6 FR 4 / m&j	–	10/0	NA	NA	PRM	12E	62°40'	49°08'
259	1-2	U / 10	0* / 5	7 V / 5		SL 4^{10}	FR 9 MU 1 / m	–	10/0	NA	NA	NA	12E	62°35'	49°30'
260	0-2	U F / 5 5	7 N / 6	0* / 4		SL $5^7 4^3$	MU 7 FR 3 / m&j	–	10/0	NA	NA	NA	12E	62°10'	49°20'
261	0-2	U H / 7 3	7 V / 5	0* / 3	8L 6T / 2	SL 5^{10}	MU 5 FR 5 / m	–	10/0	NA	NA	NA	12E	62°15'	49°10'
262	0-1	R H / 5 5	0 / 4	8 L / 3	6L 7V / 3	SL 5^{10}	MU 10	–	10/0	NA	NA	HRM	12F	61°45'	49°12'
339	0-1	R U / 6 4	0 / 6	7 V / 4		GR 3^{10}	FR 10 / m	–	10/0	NA	NA	PCM	12L	63°35'	50°12'

AS : Ashuapmuchuan

223	2-5	R U / 6 4	1 V / 5	1 A / 3	2 T / 2	GR $1^8 5^2$	FR 4 FF 2 FM 2 / j&r&m j m&j	Ct 2	10/0	NA	NA	NA	32H	73°00'	49°00'
224	2-5	H R U / 5 3 2	1 V / 5	1 A / 3	0 / 2	GR 1^{10}	FR 3 FM 3 FF 2 / j m j	Br 1 Ct 1	10/0	NA	NA	NA	32H	72°55'	49°05'
225	2-5	R U / 6 4	1 V / 5	1A 0 / 4	2 T / 1	GR $6^5 1^5$	FR 7 FM 3 / j&m m&r	–	10/0	NA	NA	NA	32H	72°40'	49°10'
226	2-5	R H / 6 4	1 V / 5	1 A / 4	2 T / 1	GR $6^4 5^3 1^3$	FR 5 FM 2 / m&j&r m&j	Ct 3	10/0	NA	NA	NA	32H	72°40'	49°20'
227	2-5	H R / 6 4	1 V / 5	1 A / 3	2 T / 2	GR $4^8 5^2$	FR 4 FF 3 FM 1 / j j m&j	Ct 2	10/0	NA	NA	NA	32H	72°20'	49°15'
228	2-5	R U / 6 4	1 A / 5	1 V / 3	2 T / 2	GR $4^4 6^4 5^2$	FR 8 FM 2 / r&j&m m	–	10/0	NA	NA	NA	32H	72°00'	49°25'
229	1-5	H R U / 5 3 2	1 V / 5	0 / 4	2 T / 1	GR $4^8 6^2$	FR 5 FM 4 FF 1 / j&m j&m j	–	10/0	NA	NA	NA	32H	72°05'	49°10'
230	2-5	R H / 6 4	1 A / 4	1 V / 3	2T 4P / 3	GR $4^7 6^3$	FM 4 FR 3 FF 2 / m m j	Ct 1	10/0	NA	NA	NA	22E	71°45'	49°10'

AU : Rivière Saint-Augustin

793	0-4	R H / 6 4	1 V / 6	1 A / 4		GR $1^5 A^5$	fR 9 MU 1 / m	–	10/0	NA	NA	NA	12O	58°10'	51°45'

BA : Lower and Mid Appalachians

56	2-7	M/10	1 V/6	1 A/4		AP $1^{7}4^{3}$	$\frac{FF^{6}FM^{4}}{m\ j}$	-	10/0	NA	NA	NA	31H	72°15'	45°20'
57	2-9	M/10	1 V/6	1 A/4		AP $1^{8}3^{2}$	$\frac{FF^{10}}{m}$	-	10/0	NA	NA	NA	31H	72°32'	45°10'
60	2-10	M H/6 4	1 A/6	1 V/4		AP 5^{10}	$\frac{FF^{4}FM^{4}FR^{2}}{m\ m\ m}$	-	10/0	NA	NA	NA	21E	70°25'	45°50'
61	2-5	R H/6 4	1 A/7	1 V/3		AP 5^{10}	$\frac{FM^{4}FR^{4}}{j\&m\ m}$	C^{2}	10/0	NA	NA	NA	21L	70°25'	46°05'
62	2-5	U F/6 4	4*P/5	7 N/3	1 A/2	AP $5^{6}1^{4}$	$\frac{FR^{4}FM^{3}FF^{2}}{m\ m\ m}$	C^{1}	10/0	NA	NA	NA	21L	70°15'	46°20'
63	2-7	H/10	1 A/6	1 V/4		AP $1^{8}3^{1}5^{1}$	$\frac{FM^{4}FF^{2}FR^{1}}{m\ m\ m}$	C^{3}	10/0	NA	NA	NA	21L	70°35'	46°25'
64	2-5	U H/6 4	7 N/5	1 A/3	4*A/2	AP $1^{4}3^{4}4^{2}$	$\frac{FR^{5}FM^{3}A^{1}}{m\&j\ m\&j}$	C^{1}	10/0	NA	NA	NA	21L	70°10'	46°45'
65	2-5	R U F/5 3 2	1 A/5	2 H/3	1 V/2	AP 1^{10}	$\frac{FR^{4}FM^{4}FF^{1}}{j\&m\ m\&j\ j}$	C^{1}	10/0	NA	NA	NA	21L	70°00'	47°00'
66	1-5	H U/6 4	2 H/5	1 A/4	7 N/1	AP 1^{10}	$\frac{FR^{6}FM^{3}}{j\ j}$	C^{1}	10/0	NA	NA	NA	21N	69°35'	47°30'
67	2-5	H R/6 4	1 V/6	1 A/4		AP 1^{10}	$\frac{FM^{4}FR^{1}FF^{1}}{j\ j\ j}$	C^{4}	10/0	NA	NA	NA	21N	69°10'	47°50'
68	1-5	M H R/5 3 2	1 A/6	1 V/4		AP $1^{6}5^{4}$	$\frac{FF^{4}FM^{3}FR^{1}}{j\ j\ j}$	C^{2}	9/1	3	NA	HRL	21N	68°50'	47°30'

BC : Baie des Chaleurs

76	0-3	R H/5 5	1 A/5	5*E/3	4*T/2	AP $5^{7}8^{3}$	$\frac{FM^{4}FR^{1}FF^{1}}{j\ j\ j}$	C^{4}	10/0	NA	NA	PSM	22A	65°35'	48°10'
77	0-1	U F R/5 3 2	5 P/5	7 V/3	5*P/2	AP $8^{7}5^{3}$	$\frac{FM^{2}}{j}$	C^{8}	10/0	NA	NA	PSM	22A	65°25'	48°05'

BE : Rivières Bersimis and Outardes Lowlands

200	1-5	H R M/5 3 2	1 V/5	1 A/3	2 T/2	GR 1^{10}	$\frac{FR^{4}FM^{3}FF^{3}}{j\&r\ j\&r\ r}$	-	10/0	NA	NA	NA	22C	69°20'	48°50'
201	0-2	U F R/4 4 2	6 T/5	7 V/4	5 E/1	GR $1^{8}2^{2}$	$\frac{FR^{7}FM^{1}}{j\&r\ m\&j}$	$C^{1}Br^{1}$	10/0	NA	NA	PSM	22F	68°30'	49°10'
202	1-3	H R/6 4	1 V/5	1 A/3	2 H/2	GR $1^{6}8^{2}2^{2}$	$\frac{FR^{7}FM^{1}}{j\&m\ r}$	$Ct^{1}Br^{1}$	10/0	NA	NA	NA	22F	68°45'	49°05'
203	0-1	F U/6 4	7 N/6	6 T/4		GR 1^{10}	$\frac{MU^{3}FR^{2}FM^{1}FF^{1}}{j\ j\ j\ r}$	Br^{3}	9/1	NA	2	PMF/PSM	22F	68°20'	49°07'
204	0-3	H R/6 4	1 V/6	0/4		GR $2^{5}1^{5}$	$\frac{FR^{8}FM^{1}}{j\&m\ m}$	Ct^{1}	10/0	NA	NA	HRM	22G	67°55'	49°20'
205	0-3	R H U/5 3 2	1 V/5	6 V/3	1 A/2	GR $2^{6}1^{4}$	$\frac{FR^{8}FF^{2}}{j\&m\&r\ j}$	-	10/0	NA	NA	PFM	22G	67°20'	49°30'

BI : Lac Bienville

861	2-4	H R U/5 4 1	0 H/6	1 V/3	7 V/1	SU $6^{5}8^{3}3^{2}$	$LI^{6}DE^{3}A^{1}$	-	9/1	1	NA	PRM	24E	71°20'	57°25'
862	1-3	H R U/6 3 1	0 H/5	4*T/4	7 V/1	SU $6^{8}3^{2}$	$DE^{3}LI^{3}A^{2}LB^{2}$	-	9/1	NA	3	HRF	24E	70°50'	57°20'
863	1-3	R H M/5 3 2	1 A/5	1 V/3	0 H/2	SU $6^{8}8^{2}$	$LI^{4}A^{2}LB^{2}DE^{2}$	-	9/1	NA	2	CCF	24E	71°05'	57°05'
864	2-4	R H U/5 3 2	1 V/5	0 H/3	1 A/2	SU $6^{7}8^{3}$	$LI^{4}A^{2}LB^{2}DE^{1}$	Br^{1}	9/1	2	3	PRL/PRF	34A	72°30'	56°45'
865	2-5	R U/7 3	1 D/5	1 H/3	1 V/2	SU $7^{7}6^{3}$	$LI^{4}LB^{3}A^{1}DE^{1}$	Br^{1}	9/1	2	3	PTL/PRF	24D	71°30'	56°30'
866	2-4	U R/9 1	1 D/8	7 V/1	0 H/1	SU $7^{5}6^{5}$	$LB^{4}LI^{3}A^{2}$	Br^{1}	9/1	2	NA	PTL	24E	70°30'	57°05'
867	2-4	U R H/6 3 1	1 H/5	1 D/3	1 V/2	SU $7^{8}6^{2}$	$LB^{3}LI^{3}A^{3}MU^{1}$	-	9/1	2	NA	PTL	24C	69°45'	56°55'
868	3-5	U/10	1 D/7	1 H/2	7 V/1	SU $6^{5}7^{3}9^{2}$	$LI^{4}LB^{3}MU^{1}A^{1}$	Br^{1}	9/1	2	NA	PTL	24D	70°05'	56°05'
869	2-5	U R H/7 2 1	0 H/4	1 V/3	1 A/3	SU $6^{6}7^{2}9^{2}$	$LI^{4}DE^{3}LB^{2}A^{1}$	-	9/1	2	NA	PRL	24C	69°30'	56°30'
870	3-5	R U/6 4	1 D/6	1 V/3	7 V/1	SU $7^{6}6^{4}$	$LI^{5}LB^{4}DE^{1}$	-	9/1	2	2	PTL/PRF	24D	71°15'	56°10'
871	3-4	R U H/6 3 1	1 V/4	1 A/4	1 H/2	SU $7^{5}6^{5}$	$LI^{4}LB^{3}$	Br^{3}	9/1	2	NA	PTL	34A	72°45'	45°15'

BI : Lac Bienville

872	3	U/10	6 T/5	7*V/3	6 V/2	SU $6^{5}7^{5}$	$LI^{4}LB^{3}.MU^{2}DE^{1}$	-	9/1	2	NA	PRL	33N	77°40'	55°05'
740	1-3	H R/7 3	O/5	6 V/4	6 T/1	SU 7^{10}	$LB^{4}DE^{3}LI^{2}A^{1}$	-	9/1	2	NA	PRL	33N	77°00'	55°35'
741	1-3	H R/6 4	5 E/5	O/3	5 H/2	SU 7^{10}	$LB^{5}LI^{2}A^{2}DE^{1}$	-	10/0	NA	NA	NA	33N	76°30'	55°55'
742	2-5	H R/6 4	1 V/5	O/4	1 A/1	SU 7^{10}	$LI^{3}LB^{3}DE^{2}A^{1}$	Br^{1}	8/2	2	3	HRL/HRF	33O	75°50'	55°50'
744	2-5	U R/7 3	1 A/5	1 D/3	1 H/2	SU 7^{10}	$LB^{5}LI^{4}MU^{1}$	-	8/2	3	NA	HTL	33O	75°30'	55°40'
745	2-5	R U/7 3	1 V/5	1 D/3	1 A/2	SU $6^{7}7^{3}$	$LB^{5}LI^{4}A^{1}$	-	9/1	2	NA	PTL	33O	75°00'	55°50'
746	2-5	H R/6 4	1 V/5	O/3	1 A/2	SU $7^{6}6^{4}$	$LB^{4}LI^{3}DE^{1}A^{1}$	Br^{1}	8/2	2	NA	HRL	34B	74°45'	56°05'
747	2-5	H R U/5 3 2	1 V/5	1 A/3	1 D/2	SU $7^{6}6^{4}$	$LB^{4}LI^{4}fR^{1}$	Br^{1}	8/2	1	NA	HTL	33O	74°20'	55°35'
748	2-5	R/10	1 V/5	1 D/3	1 H/2	SU $7^{6}6^{4}$	$LI^{4}LB^{4}$	Br^{2}	9/1	2	NA	HTL	33O	74°05'	55°15'
750	2-5	H R U/5 3 2	1 V/5	1 A/3	1 H/2	SU $7^{5}6^{5}$	$LB^{5}LI^{4}A^{1}$	-	9/1	2	NA	HTL	33P	73°35'	55°07'
751	2-3	U R/7 3	1 V/5	1 H/3	1 A/2	SU 7^{10}	$LB^{4}LI^{4}$	Br^{2}	4/6	3	NA	HTL	33P	73°25'	55°35'
752	2-5	U R/7 3	1 H/6	1 V/4		SU $7^{8}6^{2}$	$LB^{4}LI^{3}DE^{1}$	Br^{2}	4/6	3	NA	HTL	33P	72°40'	55°55'
753	2-5	U/10	1 H/6	1 D/3	1 A/1	SU $6^{7}7^{3}$	$LB^{2}MU^{1}$	Br^{7}	8/2	3	NA	PTL	33P	73°05'	55°40'
754	2-5	H R U/5 3 2	1 V/5	1 A/3	1 H/2	SU 7^{10}	$LB^{4}LI^{3}$	Br^{3}	9/1	2	NA	HRL	33P	73°00'	55°25'
755	2-5	R/10	1 V/5	1 A/3	1 H/2	SU 7^{10}	$LI^{5}LB^{3}$	Br^{2}	9/1	2	NA	HRL	33P	72°30'	55°35'
756	2-5	H R/6 4	1 V/5	1 H/3	O/2	SU $7^{9}9^{1}$	$LI^{3}LB^{2}A^{1}$	Br^{4}	9/1	2	NA	HRL	33P	72°15'	55°45'
757	2-5	U/10	1 H/6	1 D/3	1 A/1	SU $7^{5}6^{5}$	$LB^{4}LI^{2}MU^{1}$	Br^{3}	6/4	3	NA	HTL	33P	72°00'	55°15'
932	1-2	R/10	O/6	6 V/4		SU 7^{10}	$DE^{4}LB^{3}LI^{2}A^{1}$	-	10/0	NA	NA	NA	33N	77°36'	55°15'
933	1-2	R H/7 3	5 E/5	O/3	6 V/2	SU 7^{10}	$LB^{5}DE^{2}LI^{2}fR^{1}$	-	9/1	NA	2	PMF	33N	77°26'	55°20'
935	2-5	R U/6 4	1 V/5	1 H/3	1 A/2	SU $7^{7}6^{3}$	$LB^{5}LI^{3}DE^{1}$	Br^{1}	8/2	2	NA	HTL	33P	73°40'	55°50'
952	2-7	M H/6 4	1 V/5	1 A/3	O/2	SU $7^{4}6^{3}8^{3}$	$LI^{4}LB^{3}A^{1}$	Br^{2}	9/1	2	NA	HRL	23M	70°35'	55°35'

BL : Lower Laurentians

45	2-5	H M R/5 3 2	1 A/5	1 V/4	2 T/1	GR $8^{4}4^{3}6^{3}$	$FF^{8}FM^{1}$ j j	C^{1}	10/0	NA	NA	NA	31I	73°35'	46°15'
46	1-3	M U R/5 3 2	1 A/4	O/3	4*T/3	GR $8^{8}2^{2}$	$FF^{6}FM^{2}FR^{1}$ j&m j&m j	C^{1}	9/1	NA	2	HRF	31I	72°45'	46°40'
47	0-2	R H V/5 3 2	5 E/4	5*P/3	1A 3T/3	GR $1^{5}2^{5}$	$FF^{2}FM^{1}FR^{1}$ j&m j j	C^{6}	9/1	NA	1	PMF	21L	72°00'	46°45'

(1) Lac à l'Eau Claire

(2) Golfe de Richmond

BOm : Southern Lower Outaouais

25	2-5	H M / 6 4	1 V / 6	1 A / 4		GR $2^7 5^2 6^1$	FF^8 FF^1 / j m	C^1	9/1	2	3	HRL/HRF	31G	75°30'	45°50'

BOs : Northern Lower Outaouais

26	2-5	H R / 5 5	1 V / 5	1 A / 3	O / 2	GR $2^5 8^3 5^2$	FF^6 FM^3 / j m	C^1	10/0	NA	NA	NA	31J	75°05'	46°10'
27	2-5	H R U / 6 3 1	1 A / 6	1 V / 3	1 H / 1	GR $1^4 2^4 6^3$	FF^7 FM^1 FM^1 / j j m	C^1	9/1	3	NA	HTL	31J	74°55'	46°25'

BR : Brador Hills

791	1-3	R H / 6 4	O / 6	6 V / 3	1 V / 1	GR $1^7 3^3$	LI^9 KR^1	-	10/0	NA	NA	NA	12P	57°45'	51°35'
792	1-3	R H / 6 4	O / 6	1 V / 3	6 V / 1	GR $1^6 A^4$	LI^9 KR^1	-	10/0	NA	NA	NA	12P	57°20'	51°40'
795	2-5	H / 10	O / 5	1 V / 5		GR $1^5 A^5$	LI^9 KR^1	-	10/0	NA	NA	NA	12P	57°35'	51°50'

BS : Lower Saguenay Hills

147	2-5	U R F / 5 3 2	2 H / 6	1 A / 4		GR $4^5 8^5$	FM^3 FF^3 FR^2 / j j&r j	C^2	10/0	NA	NA	NA	21M	70°25'	47°40'
148	2-5	H R / 6 4	1 A / 7	2 H / 3		GR $8^9 5^1$	FR^4 FR^1 FM^1 / r j j	C^4	10/0	NA	NA	NA	21M	70°20'	47°35'
149	1-5	H R / 6 4	2 H / 6	1 A / 4		GR $5^6 1^2 2^2$	FF^5 FM^3 FR^2 / j j r	-	10/0	NA	NA	NA	21M	70°05'	47°50'
150	0-5	M R / 7 3	1 V / 7	6 T / 3		GR $2^6 1^4$	FM^6 FR^3 FF^1 / j j	-	10/0	NA	NA	HRM	21N	69°55'	48°00'
151	0-3	H M U / 5 3 2	1 V / 4	O / 3	5*E 6T / 3	GR $2+1^{10}$	FM^8 FR^1 / j r	C^1	8/2	NA	2	HRF/HRM	22C	69°45'	48°10'
152	1-5	H R / 6 4	1 V / 5	O / 3	2 H / 2	GR $2^5 1^5$	FF^3 FR^4 / j j	$C^1 Ct^2$	10/0	NA	NA	NA	22C	69°30'	48°20'
153	0-2	R U F / 5 3 2	5 E / 4	O / 3	6T 7N / 3	GR $1^5 2^3 6^2$	FR^4 FF^2 FM^2 / j&r j j&r	Ct^2	10/0	NA	NA	HRM	22C	69°20'	48°25'
154	1-3	H R / 6 4	1 V / 5	1 A / 3	2 H / 2	GR 1^{10}	FR^9 FM^1 / j&r m	-	10/0	NA	NA	NA	22C	69°10'	48°45'

BU : Lac Bouchette Highlands

233	2-5	R H U / 6 2 2	1 A / 6	1 V / 2	4 T / 2	GR $6^5 1^3 8^2$	FM^5 FF^2 FR^1 / j j j&r	$Ct^1 C^1$	10/0	NA	NA	NA	32A	72°15'	48°20'

CA : Eastern Townships

31	2-5	R H U / 5 3 2	1 A / 6	1 V / 3	7 N / 1	AP $5^6 1^4$	FF^2 FM^3 FR^2 / m j&m m&j	C^3	10/0	NA	NA	NA	21E	70°50'	46°00'
32	1-2	H R / 6 4	1 A / 6	4*T / 4		AP 1^{10}	FF^1 FM^1 FR^1 / m m m	C^7	9/1	NA	3	PRF	21L	70°50'	46°15'
33	0-2	U R F / 5 3 2	5 P / 6	6 V/5 / 4		AP 1^{10}	FF^2 FM^1 / m m	C^7	10/0	NA	NA	PRM	21L	70°50'	46°45'
34	2-5	M H R / 5 3 2	1 A / 5	1 V / 5		AP $1^7 3^2 4^1$	FF^2 FM^2 FR^1 / m m j&m	C^5	10/0	NA	NA	NA	21L	71°25'	46°05'
35	2-5	R H / 6 4	1 A / 5	1 V / 5		AP $1^6 4^4$	FF^4 FM^4 / m m	C^2	10/0	NA	NA	NA	21E	71°30'	45°50'

CC : Chics-Chocs Hills

270	5-10	M / 10	1 V / 6	O / 4		AP 1^{10}	FR^8 FM^2 / m&j m	-	10/0	NA	NA	NA	22B	66°52'	48°45'
272	2-12	M / 10	O* / 4	O / 4	1 V / 2	AP 1^{10}	FR^9 FM^1 / m&j m	-	10/0	NA	NA	NA	22B	66°35'	48°55'
273	5-10	H / 10	1 V / 6	1 A / 4		AP $5^8 1^2$	FR^7 / m&j&r	Ct^3	10/0	NA	NA	NA	22A	65°45'	48°55'

CH : Lac Chibougamau

293	2-5	U R / 6 4	1 A / 5	7 V / 3	4*P / 2	SU 6^{10}	fR^6 LB^2 MU^1 / m&j&r	Br^1	10/0	NA	NA	NA	32J	75°50'	50°05'
294	2-5	H R M / 5 3 2	1 V / 5	O / 3	1 A / 2	SU 6^{10}	fR^8 FR^2 / j j&m	-	10/0	NA	NA	NA	32J	75°40'	50°07'
295	2-5	H R U / 6 3 1	1 V / 5	1 A / 3	4 P / 2	SU $6^5 5^5$	fR^6 FR^2 / m&j j&m	Br^2	10/0	NA	NA	NA	32J	75°10'	50°05'
296	2-5	U R F / 6 3 1	1 A / 5	7 N / 3	4 P / 2	SU $3^5 1^3 7^2$	fR^7 MU^2 / j&r&m	Br^1	10/0	NA	NA	NA	32J	74°50'	50°05'
297	2-5	H R U / 6 3 1	1 V / 5	1 A / 3	4 P / 2	SU $7^5 1^5$	fR^{10} / m&r	-	5/5	3	NA	HTL	32G	75°00'	49°55'
298	2-5	U R / 6 4	4*P / 5	2 H / 3	7 N / 2	SU $7^5 1^3 3^2$	fR^7 MU^3 / j&m&r	-	9/1	2	NA	PTL	32G	74°55'	49°45'

CH : Lac Chibougamau

299	2-7	H R U / 5 4 1	1 V / 6	1 A / 4		SU $6^{6}3^{3}7^{1}$	fR ^{6}FM^{1} / m&j m	$Br^{2}Ct^{1}$	9/1	3	NA	HTL	32J	74°10'	[illegible]
300	2-5	U R / 6 4	1 H / 5	1 A / 3	1 D / 2	SU $6^{8}9^{2}$	fR ^{7}MU^{2} / m&j	Br^{1}	4/6	3	NA	HTL	32I	74°00'	[illegible]
301	2-5	R U / 6 4	1 A / 5	1 D / 3	4*P / 2	SU $9^{5}6^{9}3^{2}$	fR ^{10} / m	-	7/3	3	NA	HTL	32I	73°50'	[illegible]
302	2-6	U R H / 5 4 1	1 A / 5	2 P / 3	1 H / 2	GR $2+1^{10}$	fR ^{10} / r&j&m	-	10/0	NA	NA	NA	32I	73°30'	[illegible]
303	2-5	U / 10	1 A / 5	1 D / 3	4 P / 2	SU $7^{4}1^{3}5^{3}$	fR ^{10} / m&j	-	5/5	3	NA	PTL	32G	74°20'	[illegible]
304	2-5	U R / 6 4	1 A / 5	4 P / 3	1 D / 2	GR $1^{5}2^{3}3^{2}$	fR ^{9} / m&j	Ct^{1}	7/3	3	NA	PTL	32G	74°20'	49°20'
305	2-5	U R / 6 4	1 A / 5	1 H / 3	7 N / 2	GR $1^{6}2^{4}$	fR ^{5}MU^{2} / m&j	$Br^{2}Ct^{1}$	10/0	NA	NA	NA	32H	73°50'	49°20'
306	2-7	H R U / 5 3 2	1 A / 6	1 V / 4		GR $2+1^{10}$	fR ^{8}MU^{1} / m&j&r	Ct^{1}	10/0	NA	NA	NA	32H	74°00'	49°40'
307	2-5	R H / 6 4	1 V / 5	1 A / 3	4 P / 2	SU $1^{4}7^{3}5^{3}$	fR ^{7}FR^{2}FM^{1} / m&j j&r	-	10/0	NA	NA	NA	32G	76°00'	49°50'
308	2-5	R U / 6 4	1 A / 5	4 P / 3	1 V / 2	SU $7^{6}1^{4}$	fR ^{8}FM^{1} / m&j m&j	Ct^{1}	9/1	3	NA	HTL	32G	75°30'	49°15'
309	2-5	U / 10	7 N / 6	4 P / 4		SU $1^{5}7^{3}3^{2}$	fR ^{6}MU^{4} / m&r	-	9/1	2	NA	PML	32G	75°35'	49°00'
310	2-5	R U / 6 4	1 V / 5	4*A / 3	4 P / 2	SU $7^{5}6^{3}1^{2}$	fR ^{9}LB^{1} / m&j	-	10/0	NA	NA	NA	32C	76°35'	48°55'
311	2-6	H R / 6 4	1 V / 6	1 A / 4		SU 7^{10}	fR ^{5}FM^{3}FF^{2} / m&j m m	-	10/0	NA	NA	NA	32C	76°25'	48°40'
312	2-5	R U / 6 4	1 H / 5	1 A / 3	7 N / 2	SU $6^{6}7^{4}$	fR ^{10} / m&j	-	10/0	NA	NA	NA	32B	75°20'	48°50'
313	2-6	H R / 6 4	1 V / 5	1 A / 4	2 H / 1	GR $6^{5}1^{3}2^{2}$	fR ^{8}FM^{1} / m&j	Ct^{1}	10/0	NA	NA	NA	32B	74°40'	49°00'
314	2-6	H R / 6 4	1 A / 5	1 V / 4	2 T / 1	GR $1^{5}2^{5}$	fR ^{6}FM^{2} / m&j m	Ct^{2}	10/0	NA	NA	NA	32H	73°30'	49°25'
315	2-7	M H / 6 4	1 V / 6	1 A / 4		GR $8^{5}6^{3}1^{2}$	fR ^{5}FM^{3}FF^{1} / m&r&j m m&j	Ct^{1}	10/0	NA	NA	NA	32H	72°35'	49°45'
316	2-6	R H / 5 5	1 A / 5	1 V / 5		GR $1^{5}2^{3}5^{2}$	fR ^{7}FF^{1} / r&m&j m	Ct^{2}	10/0	NA	NA	NA	32H	73°10'	49°20'
317	2-5	H R / 6 4	1 V / 5	1 A / 5		GR 6^{10}	FM^{4}FR^{2} / m m&j	Ct^{4}	10/0	NA	NA	NA	32H	72°50'	49°25'
318	2-7	M / 10	1 V / 6	1 A / 4		GR $4^{5}2^{3}1^{2}$	fR ^{10} / m&j&r	-	10/0	NA	NA	NA	22E	71°25'	49°40'
319	2-8	M H R / 5 4 1	1 V / 5	1 A / 4	1 H / 1	GR $4^{6}2+1^{4}$	FR ^{8} / m&j&r	$Ct^{1}Br^{1}$	9/1	3	NA	HRL	22E	70°20'	49°50'
320	2-6	R U H / 6 2 2	1 A / 6	1 H / 3	1 V / 1	GR $8^{6}6^{4}$	FR ^{8}FM^{2} / m&j j	-	8/2	3	NA	HTL	22L	71°00'	50°05'
321	2-5	U / 10	1 H / 7	7*V / 3		GR 4^{10}	FR ^{10} / m&j	-	4/6	3	NA	PTL	22E	70°40'	49°35'
322	2-5	U R / 6 4	1 H / 5	2 T / 3	1 A / 2	GR $2^{5}1^{3}8^{2}$	FR ^{10} / m&j	-	10/0	NA	NA	NA	22E	70°37'	50°00'
323	2-5	U / 10	4*T / 5	7 V / 5		GR $2+1^{10}$	FR ^{10} / m&j	-	10/0	NA	NA	NA	22F	70°00'	49°50'
324	2-8	M H R / 5 3 2	1 V / 6	O / 4		GR $8^{6}6^{4}$	FR ^{9} / j&r&m	Ct^{1}	9/1	3	NA	HRL	22F	69°55'	49°10'
367	2-5	U R / 6 4	4 P / 5	1 A / 3	1 V / 2	SU $1^{5}3^{5}$	fR ^{9}MU^{1} / j&m	-	9/1	3	NA	PTL	32G	75°35'	49°55'
368	2-5	R U / 6 4	1 A / 5	1 V / 3	4*P / 2	SU $9^{6}6^{4}$	fR ^{6}FR^{2}FM^{1} / j&m m&j	Br^{1}	8/2	3	NA	HTL	32J	74°05'	50°25'
412	2-6	U R / 6 4	1 H / 5	1 A / 3	1 D / 2	GR $2+1^{10}$	fR ^{9}MU^{1} / m&r	-	9/1	3	NA	HTL	32I	73°30'	50°15'
759	2-5	F U / 6 4	7*V / 5	2 T / 3	1 H / 2	GR $8^{6}2+1^{4}$	FR ^{10} / j&m	-	9/1	2	NA	PTL	22E	71°35'	49°50'
760	2-7	R U H / 6 2 2	1 A / 5	1 V / 3	2 T / 2	GR $4^{5}8^{3}2^{2}$	FR ^{10} / m&j	-	10/0	NA	NA	NA	22E	71°30'	49°40'
326	2-10	H R M / 5 3 2	1 V / 5	O / 3	1A 2T / 2	GR $2^{4}4^{3}8^{3}$	FR ^{8}FM^{1} / m&j j&r&m	Ct^{1}	9/1	3	NA	HRL	22K	69°00'	50°00'
327	2-7	R / 10	1 A / 7	1 D / 3		GR $2+1^{10}$	FR ^{10} / m&j	-	9/1	NA	2	PMF	22N	69°00'	51°10'
328	2-6	M R H / 5 3 2	1 V / 6	O / 4		GR $2+1^{6}4^{4}$	FR ^{4}FM^{3} / m r	$Br^{2}Ct^{1}$	10/0	NA	NA	NA	22G	67°50'	49°45'
325	5-10	U / 10	1 H / 5	2 T / 4	1 A / 1	GR $8^{4}3^{2}3^{3}$	FR ^{9} / m&j	Br^{1}	10/0	NA	NA	NA	22L	70°15'	50°30'

CL : Laurentians Foothills

114	0-2	M H R / 6 3 1	O / 4	1 V / 3	5*E 1A / 3	GR $1^{5}5^{5}$	FM^{6} FR^{3} FF^{1} / j j&m j	–	6/4	NA	2	HRF	22D	70°20'	48°20'
115	1-5	H R / 6 4	1 V / 6	1 A / 4		GR $4^{5}1^{5}$	FM^{6} FF^{4} / j j	–	10/0	NA	NA	NA	22D	70°50'	48°30'
116	1-2	H R M / 4 3 3	1 V / 6	1 A / 3	O / 1	GR $4^{7}2^{2}1^{1}$	FM^{9} / j&m	C^{1}	6/4	3	NA	HRL	22D	71°28'	48°20'
117	1-2	R U M / 4 4 2	2 T / 5	4*T / 4	O / 1	GR $5^{7}8^{3}$	FR^{7} FM^{2} FF^{1} / m j j	–	10/0	NA	NA	NA	22D	70°00'	48°20'

CM : Lac Camachigama

984	3-5	H / 10	1 V / 6	1 A / 4		GR 1^{10}	FM^{10} / m	–	9/1	2	NA	HRL	31N	77°00'	47°50'
985	3-4	U R F / 5 3 2	2 H / 5	1 A / 3	7 N / 2	GR $1^{5}4^{6}1^{1}$	FM^{6} FR^{2} MU^{1} / m&r r	Ct^{1}	9/1	2	NA	PTL	31N	76°30'	47°40'

CN : North Shore

329	1-7	M H / 6 4	1 V / 5	O / 4	1 A / 1	GR $1^{5}4^{3}6^{2}$	FR^{8} FM^{1} DE^{1} / m&r j&r	–	10/0	NA	NA	NA	22J	67°00'	50°25'
330	0-5	H R / 6 4	1 V / 5	O / 3	4*T / 2	GR $1^{8}5^{2}$	FR^{8} FM^{1} DE^{1} / m j	–	10/0	NA	NA	NA	22J	66°05'	50°30'
331	1-3	R H / 6 4	O / 5	1 V / 3	6 V / 2	GR $4^{6}6^{4}$	fR^{6} DE^{3} FM^{1} / m&j j	–	10/0	NA	NA	NA	22I	65°25'	50°22'
332	0-1	R U / 7 3	O / 4	6 T / 3	7 V / 3	GR $6^{4}5^{3}4^{3}$	A^{4} DE^{4} fR^{2}	–	10/0	NA	NA	PRM	22I	65°40'	50°12'
333	2-6	H R M / 5 3 2	1 V / 5	1 A / 3	O / 2	GR $4^{6}6^{2}2^{2}$	FR^{7} FM^{1} A^{1} DE^{1} / m m&j	–	10/0	NA	NA	NA	22I	64°10'	50°40'
334	2-6	M R / 6 4	1 V / 5	1 A / 3	1 D / 2	GR $4^{7}2+1^{3}$	fR^{4} FF^{3} FM^{2} LB-DE^{1} / m r&j r&j	–	9/1	3	NA	HTL	22P	64°40'	51°00'
335	2-6	M H / 6 4	1 V / 5	O / 3	4*T / 2	GR $4^{4}6^{3}5^{3}$	FR^{9} DE^{1} / m	–	10/0	NA	NA	NA	12M	63°15'	51°00'
336	1-3	R H / 6 4	O / 5	1 V / 3	6 V / 2	GR $4^{7}6^{3}$	fR^{2} FR^{1} A^{1} DE^{2} FM^{3} / m m m	Br^{1}	10/0	NA	NA	NA	12L	63°40'	50°30'
337	1-3	R U / 6 4	O / 4	7 V / 3	6 T / 3	GR $6^{4}5^{3}4^{3}$	DE^{4} A^{4} FM^{2}	–	10/0	NA	NA	PRM	12L	63°35'	50°12'
338	0-1	U F R / 5 3 2	7 N / 5	6 T / 3	4*T / 2	GR $5^{6}2+1^{4}$	A^{5} DE^{5}	–	10/0	NA	NA	PSM	12L	63°30'	50°18'
340	2-6	H M / 6 4	1 V / 5	1 A / 3	O / 2	GR $2^{6}3^{2}6^{2}$	FR^{7} A^{2} DE^{1} / m	–	10/0	NA	NA	NA	12L	62°40'	50°55'
341	1-3	H R / 6 4	O / 4	1 V / 3	6 V / 3	GR $2+1^{5}3^{5}$	fR^{5} FR^{3} A^{1} DE^{1} / m m	–	8/2	3	NA	HRL	12L	62°35'	50°35'
342	0-1	R / 10	O / 5	7 V / 3	6 V / 2	GR $6^{4}3^{3}2^{3}$	fR^{4} DE^{3} A^{3} / m	–	9/1	2	NA	HRL/PRM	12L	62°40'	50°20'
343	2-6	H R M / 5 3 2	1 V / 5	1 A / 3	O / 2	GR $2+1^{10}$	FR^{5} A^{3} DE^{2} / m	–	10/0	NA	NA	NA	12L	62°10'	50°55'
344	1-3	H M U / 5 3 2	1 V / 5	O / 4	4*T / 1	GR $6^{5}2+1^{5}$	FR^{8} DE^{1} / m	Br^{1}	9/1	NA	2	HRF	12N	61°35'	51°10'
345	2-5	H / 10	1 V / 6	1 A / 4		GR $2+1^{10}$	FR^{10} / m	–	9/1	3	NA	HRL	12N	61°45'	51°05'
346	1-2	R H / 6 4	O / 4	1 V / 3	6 V / 3	GR $1^{8}2^{2}$	fR^{4} FR^{2} MU^{2} DE^{1} A^{1} / m m	–	9/1	3	3	HRL/HRF	12K	61°50'	50°30'
347	1-3	R U / 6 4	O / 4	4*T / 3	6V 7V / 3	GR 1^{10}	MU^{4} DE^{3} A^{2} fR^{1}	–	10/0	NA	NA	NA	12K	62°00'	50°20'
348	0-2	U / 10	4*T / 7	5 E / 3		GR 1^{10}	FR^{7} MU^{2} / m	Br^{1}	9/1	NA	3	HRF	12O	59°00'	51°22'
948	1-5	H / 10	1 V / 6	1 A / 4		GR $1^{6}4^{2}6^{2}$	fR^{6} FR^{3} / m m	Br^{1}	9/1	3	NA	HRL	12K	60°10'	50°55'
758	2-5	U R / 6 4	2 T / 5	4*T / 5		GR $6^{7}5^{3}$	fR^{7} FR^{2} MU^{1} / m m	–	9/1	NA	3	HRF	12N	60°45'	51°08'

CO : Gaspésie Coast and Îles-de-la-Madeleine

156	0-1	U R / 6 4	6 T / 4	7 N / 3	5E 4*T / 3	AP 1^{10}	FM^{2} / j	C^{8}	10/0	NA	NA	HRM	22C	68°00'	48°40'
157	0-2	R / 10	1 A / 4	6 T / 4	4*T / 2	AP $5^{4}8^{3}1^{3}$	FM^{7} FR^{1} / j j	C^{2}	10/0	NA	NA	HRM	22A	64°30'	48°25'
160	0-1	U M / 7 3	6 R / 7	6 V / 2	O / 1	AP 8^{10}	H^{8} FR^{2}	–	5/5	NA	NA	BCM	11N	61°45'	47°20'

CR : Cratère du Nouveau Québec

808	2-4	U R 8 2	O H 8	1 V 1	7 V 1	CH 1^{10}	$DE^{7}LI^{2}MU^{1}$	-	10/0	NA	NA	NA	35K	77°00'	62°15'
809	2-4	R U 7 3	O H 6	1 V 3	7 V 1	CH $1^{7}4^{3}$	$DE^{6}LI^{2}MU^{2}$	-	10/0	NA	NA	NA	35J	75°40'	62°02'
810	2-5	H R 5 5	O H 9	1 V 1		CH $1^{6}4^{2}3^{2}$	$DE^{6}LI^{3}MU^{1}$	-	9/1	2	NA	PRL	35G	75°45'	61°45'
811	1-6	H R U 5 3 2	O R 6	1 V 3	7 V 1	CH $4^{9}5^{1}$	$LI^{6}MU^{2}DE^{2}$	-	9/1	2	NA	PRL	35G	75°30'	61°20'
812	3-6	U R 6 4	O R 7	1 V 2	7 V 1	CH $4^{5}1^{3}3^{2}$	$DE^{8}LI^{1}MU^{1}$	-	10/0	NA	NA	NA	35A	73°30'	61°45'
813	3-6	U R 7 3	1 H 4	O H 3	1 V 3	CH $1^{6}2^{4}$	$DE^{7}LI^{2}MU^{1}$	-	8/2	3	NA	PTL/PRL	35G	74°10'	61°10'
814	4-6	U R 7 3	O H 5	1 A 3	1 H 2	CH $1^{6}3^{2}4^{2}$	$LI^{5}DE^{4}MU^{1}$	-	9/1	2	NA	PRL/PTL	35H	72°45'	61°15'
815	2-5	U R H 7 2 1	1 A 5	1 V 3	O H 2	CH 1^{10}	$LI^{5}DE^{3}MU^{2}$	-	10/0	NA	NA	NA	35A	72°30'	60°30'
816	2-4	U R 7 3	O H 3	1 V 3	1 A 4	CH 1^{10}	$DE^{6}LI^{3}MU^{1}$	-	9/1	2	3	CDF/PRL	25D	71°15'	60°30'

CT : Lac Couture

827	1-3	R U 6 4	O H 6	1 H 3	7 V 1	SU $6^{7}7^{3}$	$DE^{6}LI^{3}MU^{1}$	-	8/2	3	NA	PTL/PRL	35C	76°20'	60°55'
828	2-4	R U 7 3	O H 6	1 V 4		SU $6^{6}7^{4}$	$DE^{8}LI^{2}$	-	7/3	2/3	NA	PTL/PRL	35B	75°30'	60°45'
829	1-2	R U 6 4	O H 6	1 V 3	1 H 1	SU 6^{10}	$DE^{6}LI^{3}MU^{1}$	-	7/3	2/3	NA	PTL/PRL	35B	75°45'	60°05'
830	2-3	R H U 7 2 1	O H 6	1 V 4		SU $7^{4}8^{4}6^{2}$	$LI^{6}DE^{4}$	-	6/4	3	NA	PTL/PRL	35A	73°45'	60°05'
831	1-2	R U 6 4	O H 7	1 V 3		SU 6^{10}	$DE^{7}LI^{3}$	-	9/1	1	NA	PTL/PRL	34O	75°30'	59°35'
832	1-2	U 10	1 H 7	7 V 2	1 A 1	SU 6^{10}	$DE^{5}LI^{3}MU^{2}$	-	9/1	2	NA	PTL	34O	75°30'	59°20'

CU : Churchill Falls

663	3-8	R U H 5 3 2	1 V 5	1 D 3	4*T 2	GR $6^{8}1^{2}$	$\frac{fR^{9}}{r\&m}$	Br^{1}	10/0	NA	NA	NA	12M	63°45'	51°40'
664	5-10	R 10	1 D 7	7 V 3		GR $6^{9}5^{1}$	$\frac{fR^{8}FM^{1}}{m\ m}$ *	Br^{1}	9/1	3	NA	HRL	12M	63°10'	51°55'
665	2-6	R H 6 4	1 V 4	1 A 3	1H 2H 3	GR 1^{10}	$\frac{fR^{8}}{m}$	Br^{2}	10/0	NA	NA	NA	12N	61°50'	51°55'
666	2-6	U R 6 4	1 H 5	1 V 3	7 V 2	GR $1^{9}6^{1}$	$\frac{fR^{10}}{m}$	-	10/0	NA	NA	NA	12N	61°20'	51°55'
979	3-6	H 10	1 V 5	O 4	7 V 1	GR 1^{10}	$\frac{fR^{10}}{m}$	-	9/1	NA	2	CDF	13D	63°27'	52°40'

DE : Lac Delorme

718	4-10	H M R 6 3 1	1 V 5	1 A 3	1 H 2	SU $6^{5}7^{3}8^{2}$	$LB^{7}LI^{2}A^{1}$	-	9/1	2	NA	HRL	23M	70°15'	55°00'
719	5-10	M H 6 4	1 V 7	O 2	1 H 1	SU $6^{5}8^{5}$	$LI^{6}LB^{3}A^{1}$	-	10/0	NA	NA	NA	23L	70°25'	54°40'
720	5-10	M H 6 4	1 V 5	1 A 3	O 2	SU $8^{5}6^{3}7^{2}$	$LI^{5}LB^{3}A^{2}$	-	9/1	2	NA	HRL	23L	70°20'	54°20'
721	5-10	R H 6 4	1 V 5	1 A 3	1 H 2	SU $3^{7}6^{3}$	$LB^{8}LI^{2}$	-	10/0	NA	NA	NA	23L	70°05'	54°35'
722	5-10	R U M 5 3 2	1 H 5	1 A 3	1 V 2	SU $8^{6}7^{2}3^{2}$	$LB^{8}LI^{2}$	-	8/2	3	NA	HTL	23L	70°05'	54°10'
723	5-10	U R 7 3	1 H 5	7*V 3	1 A 2	SU $3^{4}6^{4}7^{2}$	$LB^{7}LI^{2}MU^{1}$	-	7/3	3	NA	HTL	23K	69°55'	54°25'
724	5-10	R H 6 4	1 A 5	1 V 4	1 H 1	SU $6^{8}3^{2}$	$LB^{8}LI^{2}$	-	10/0	NA	NA	NA	23K	69°30'	54°35'
725	5-10	U 10	7*V 5	1 H 3	1 A 2	SU $7^{8}6^{2}$	$LB^{7}MU^{3}$	-	8/2	2	NA	PTL	23K	69°05'	54°30'
726	5-10	U F R 5 4 1	7*V 5	1 H 3	1 A 2	SU $7^{5}6^{5}$	$LB^{7}MU^{3}$	-	10/0	NA	NA	NA	23K	68°40'	54°10'
727	5-10	H R M 5 3 2	1 A 5	1 V 3	1 H 2	SU 3^{10}	$LB^{7}LI^{3}$	-	9/1	2	NA	HTL	23K	69°10'	54°15'

DE : Lac Delorme

729	3-10	M/6 H/4	1/5 V	1/3 A	0/2	SU $8^6 7^2 6^2$	$LI^5 LB^4 A^1$	-	9/1	2	2	HRL/HRF	23N	69°10'	55°25'
730	4-10	R/10	1/6 D	1/4		SU $8^8 7^2$	LB^{10}	-	8/2	3	NA	HTL	23N	69°30'	55°20'
763	2-5	R/7 H/3	1/6 H	1/2 D	1/2 A	SU $6^5 7^5$	$LB^6 LI^2$	Br^2	10/0	NA	NA	NA	23N	68°40'	55°55'
951	5-10	R/5 H/3 U/2	1/5 A	1/4 V	1/1 H	SU $7^4 6^3 8^3$	$LB^8 LI^2$	-	8/2	2	NA	PTL	23K	68°40'	54°30'

DO : Lac Domagaya

662	5-10	U/10	1/5 H	1/3 D	7*V/2	GR $4^7 6^3$	fR/m $^7 MU^2$	Br^1	10/0	NA	NA	NA	22P	64°05'	51°50'
977	3-6	U/10	1/5 D	1/3 V	7*V/2	GR $1^9 3^1$	fR/m $^8 MU^2$	-	8/2	1	2	HRL/CDF	13D	64°00'	52°15'
978	3-6	R/6 H/4	1/6 V	0/4		GR 1^{10}	fR/m $^7 DE\text{-}LI^3$	-	9/1	1	2	PTL/PTF	13D	63°50'	52°40'

ES : Saint-Laurent River Estuary

104	1-5	R/5 H/4 U/1	1/7 V	1/3 A		AP $1^7 5^3$	FM/j ^{3} FF/j ^{2} FR/m&j ^{2}	C^3	10/0	NA	NA	NA	22C	68°00'	48°35'
105	2-6	R/6 H/4	1/5 V	1/4 A	1/1 H	AP 5^{10}	FR/j ^{8} FM/j&m ^{2}	-	10/0	NA	NA	NA	22C	68°05'	48°15'
106	1-5	H/10	1/6 V	0/4		AP $1^8 5^2$	FM/j ^{7} FF/j ^{1}	C^2	10/0	NA	NA	NA	22B	67°20'	48°50'
107	1-5	R/5 U/3 H/2	1/6 A	1/4 V		AP $5^8 1^2$	FM/j ^{2} FF/j ^{2}	C^6	9/1	3	NA	HTL	22B	67°20'	48°35'
108	0-5	M/10	1/5 V	0/4	4*T/1	AP 1^{10}	FM/j ^{5} FR/j ^{4}	C^1	10/0	NA	NA	HRM	22H	65°30'	49°14'
109	1-2	R/10	1/6 A	4*T/4		AP 5^{10}	FM/j ^{10}	-	10/0	NA	NA	NA	22A	64°30'	48°47'
110	1-3	R/10	1/6 V	0/4		AP 5^{10}	FM/m ^{7} FR/j ^{3}	-	10/0	NA	NA	NA	22A	64°25'	48°35'
111	1-3	R/10	1/6 V	1/4 A		AP 5^{10}	FM/j ^{10}	-	10/0	NA	NA	NA	22A	64°40'	48°27'
112	1-3	R/5 H/5	1/6 A	1/4 V		AP $1^6 5^4$	FM/j ^{5} FF/j ^{3} FR/j&m ^{2}	-	10/0	NA	NA	NA	22A	65°00'	48°15'
113	1-3	M/6 H/4	1/5 V	0/4	1/1 A	AP 5^{10}	FM/j&m ^{8} FR/j ^{1} FF/j&r ^{1}	-	10/0	NA	NA	NA	22B	67°00'	48°05'

ESi : Saint-Laurent Estuary Lowlands (lower)

69	0-2	U/6 F/4	6/6 T	5/2 P	7/2 N	AP 1^{10}	FM/j ^{1}	C^9	10/0	NA	NA	PSM	21N	69°30'	47°43'
70	0-3	R/6 H/4	1/7 V	1/2 A	7/1 N	AP 1^{10}	FM/j ^{1}	C^9	10/0	NA	NA	NA	22C	68°50'	48°10'

ESs : Saint-Laurent Estuary Lowlands (upper)

36	0-2	U/6 F/4	5/10 P			AP 1^{10}	FM/m ^{2}	C^8	10/0	NA	NA	PMM	21M	70°15'	47°10'

EV : Lac Evans

349	1-2	U/6 F/4	6/5 P	7*V/3	7/2 S	SU $6^6 10^4$	fR/j&r ^{5} MU ^{5}	-	10/0	NA	NA	NA	32L	79°25'	50°30'
350	1-2	U/6 F/4	7/5 V	7/3 N	0/2	SU 6^{10}	$LB^7 MU^3$	-	10/0	NA	NA	NA	32L	79°15'	50°25'
351	0-3	F/6 U/4	7/5 V	7/3 S	7/2 N	SU $6^5 3^3 10^2$	$MU^6 LB^2$ fR/r&j ^{1}	Br^1	9/1	NA	1	PMF	32L	78°50'	50°40'
352	0-2	U/6 F/4	6/5 P	7*V/3	7/2 S	SU 10^{10}	MU ^{6} fR/j&m ^{2}	Br^2	10/0	NA	NA	NA	32L	79°10'	50°50'
354	1-3	U/6 F/3 R/1	7/5 S	7/3 V	7/2 N	SU $3^8 6^2$	$MU^5 LB^3$ fR/r&m ^{1}	Br^1	10/0	NA	NA	NA	32M	78°10'	51°00'
355	2-3	U/6 F/4	7/5 N	7/3 V	1/2 P	SU 6^{10}	$MU^5 LB^3$ fR/r&m ^{2}	-	10/0	NA	NA	NA	32L	78°25'	50°30'
356	2-3	U/10	1/5 P	7/3 V	7/2 N	SU $6^8 3^2$	$MU^5 LB^3$ fR/r&m ^{2}	-	10/0	NA	NA	NA	32K	77°50'	50°30'
357	2-3	F/6 U/4	7/5 N	1/3 P	7/2 V	SU 6^{10}	MU ^{6} fR/m $^2 LB^2$	-	9/1	2	NA	PML	32K	78°00'	50°07'
358	0-1	R/5 U/3 F/2	5/5 E	7/3 V	7/2 N	SU $3^7 10^3$	fR/m&r ^{5} MU $^4 LB^1$	-	9/1	NA	2	PMF	32M	78°35'	51°17'
359	0-1	F/6 U/4	7/5 V	7/3 S	7/2 N	SU 3^{10}	$MU^7 LB^3$	-	10/0	NA	NA	NA	32M	78°30'	51°20'

EV : Lac Evans

363	0-2	F U R / 5 3 2	7 V / 5	7 N / 4	6 T / 1	SU 3^{10}	$MU^{5}fR^{3}LB^{2}$	-	10/0	NA	NA	NA	32M	78°05'	51°30'
365	1-2	U R / 7 3	7 V / 5	6 P / 3	7 N / 2	SU 3^{10}	$MU^{5}fR^{3}LB^{2}$	-	10/0	NA	NA	NA	32N	77°45'	51°40'
366	0-2	R U / 6 4	5 E / 6	7 V / 4		SU 3^{10}	$fR^{6}MU^{4}$	-	10/0	NA	NA	NA	32N	77°50'	51°50'
369	1-2	R U / 6 4	0 / 5	7 V / 3	6 V / 2	SU 3^{10}	$LB^{5}MU^{3}\frac{fR}{r}^{2}$	-	10/0	NA	NA	NA	32M	78°10'	51°15'
370	1-2	R U F / 5 3 2	5 E / 5	7 V / 3	7 N / 2	SU 3^{10}	$fR^{6}MU^{3}LB^{1}$	-	10/0	NA	NA	NA	32N	77°55'	51°15'
371	2-5	U R / 6 4	7 V / 5	5 P / 3	1 V / 2	SU 3^{10}	$MU^{5}\frac{fR}{r\&m}^{2}LB^{2}$	Br^{1}	9/1	3	2	PML/PMF	32N	77°25'	51°15'
373	2-4	R U / 6 4	7 V / 5	6 V / 3	0 / 2	SU 3^{10}	$LB^{5}fR^{3}MU^{2}$	-	10/0	NA	NA	NA	33C	77°10'	52°00'
374	2-4	U F R / 5 3 2	7 V / 5	7 N / 3	5 P / 2	SU $3^{6}1^{4}$	$MU^{5}fR^{3}LB^{2}$	-	10/0	NA	NA	NA	32N	76°50'	51°55'
375	2-4	R U / 6 4	6 T / 5	7 V / 3	6 V / 2	SU 3^{10}	$fR^{6}LB^{3}FR^{1}$	-	10/0	NA	NA	NA	33C	76°50'	52°06'
376	2-4	F U / 6 4	7 N / 5	7 V / 3	5 E / 2	SU 6^{10}	$MU^{6}LB^{3}fR^{1}$	-	10/0	NA	NA	NA	32N	76°35'	51°50'
377	2-4	H R / 6 4	1 V / 5	0 / 3	6 V / 2	SU 6^{10}	$fR^{6}LB^{3}FR^{1}$	-	10/0	NA	NA	NA	32N	76°20'	51°50'
378	1-3	R H U / 5 3 2	0 / 5	6 V / 3	7 V / 2	SU $3^{6}6^{4}$	$FR^{5}LB^{5}$	-	10/0	NA	NA	NA	33C	78°00'	52°00'
379	2-5	U F / 6 4	7 N / 5	7 V / 3	7 S / 2	SU $3^{8}1^{2}$	$MU^{6}LB^{3}fR^{1}$	-	9/1	2	NA	PML	33C	76°30'	52°05'
380	2-5	R H / 7 3	1 V / 5	1 D / 3	0 / 2	SU $6^{5}7^{5}$	$fR^{5}LB^{5}$	-	9/1	2	NA	HRL	32N	76°50'	51°35'
381	2-5	R U / 6 4	7 V / 5	1 V / 3	1 D / 2	SU $7^{7}6^{3}$	$fR^{4}LB^{3}MU^{2}$	Br^{1}	9/1	2	NA	PTL	32N	76°15'	51°35'
382	2-5	R U / 6 4	1 D / 5	7 N / 3	6 V / 2	SU $7^{5}6^{5}$	$fR^{7}MU^{3}$	-	9/1	2	2	PTL/PTF	32N	77°00'	51°25'
383	2-5	R U H / 6 3 1	1 V / 5	1 A / 3	7 V / 2	SU 3^{10}	$fR^{5}LB^{3}MU^{2}$	-	9/1	3	NA	HTL	32N	76°40'	51°15'
384	2-5	R U / 7 3	1 D / 5	7 V / 3	1 V / 2	SU $3^{6}7^{2}6^{2}$	$fR^{5}LB^{3}MU^{1}$	Br^{1}	9/1	3	NA	PTL	32N	76°15'	51°15'
385	2-5	U R / 7 3	2 H / 5	4*T / 3	7 N / 2	SU 3^{10}	$fR^{6}MU^{3}$	Br^{1}	8/2	NA	2	RFF	32N	76°15'	51°23'
386	2-5	R U / 6 4	1 A / 5	7 V / 3	1 D / 2	SU $3^{6}6^{2}2^{2}$	$\frac{fR}{r\&m}^{6}LB^{2}MU^{1}$	Br^{1}	7/3	3	NA	PTL	32K	76°20'	50°55'
387	2-5	U F / 7 3	4 P / 5	7 V / 3	7 N / 2	SU 6^{10}	$\frac{fR}{m\&r}^{5}LB^{2}MU^{2}$	Br^{1}	6/4	3	NA	PML	32K	77°10'	50°55'
388	2-5	U R / 6 4	4 P / 6	7 N / 3	7 V / 1	SU $6^{5}1^{3}2^{2}$	$fR^{5}MU^{3}LB^{1}$	Br^{1}	9/1	3	NA	PML	32K	76°20'	50°45'
389	2-5	R U H / 5 4 1	4 P / 6	4*A / 3	7 V / 1	SU $6^{8}7^{2}$	$\frac{fR}{m\&j\&r}^{8}MU^{1}$	Br^{1}	9/1	3	NA	PML	32K	76°35'	50°25'
390	2-5	R U H / 5 4 1	4 P / 6	1 V / 3	1 A / 1	SU $6^{7}7^{2}1^{1}$	$\frac{fR}{j\&m\&r}^{6}LB^{3}fM^{1}$	-	9/1	3	NA	PML	32K	77°10'	50°35'
391	2-5	U R / 7 3	4 P / 6	7 V / 3	7*V / 1	SU 6^{10}	$\frac{fR}{r\&m\&j}^{7}LB^{2}MU^{1}$	-	10/0	NA	NA	NA	32K	77°25'	50°15'
392	2-5	R U / 7 3	4 P / 6	1 V / 3	1 A / 1	SU 6^{10}	$\frac{fR}{j\&m}^{9}LB^{1}$	-	10/0	NA	NA	NA	32K	77°05'	50°15'
393	2-5	R U / 6 4	6 T / 5	7 V / 3	6 V / 2	SU $6^{8}1^{2}$	$fR^{5}LB^{2}MU^{1}$	Br^{2}	10/0	NA	NA	NA	32N	76°15'	52°00'
394	2-3	*R U / 6 4	1 H / 5	1 V / 3	7 V / 2	SU 6^{10}	$fR^{6}LB^{2}fM^{1}$	Br^{1}	10/0	NA	NA	NA	33C	76°05'	52°20'
395	2-3	H / 10	1 V / 5	0 / 3	1 A / 2	SU $1^{6}2^{4}$	$fR^{6}LB^{3}fM^{1}$	-	10/0	NA	NA	NA	33C	76°20'	52°13'
396	1-3	R U / 6 4	5 E / 5	7 V / 3	4*T / 2	SU $6^{4}2^{4}3^{2}$	$fR^{6}LB^{3}MU^{1}$	-	9/1	NA	1	PMF	33C	77°05'	52°20'
397	2-3	R U / 6 4	6 T / 5	7 V / 3	6 V / 2	SU $3^{4}7^{3}2^{3}$	$fR^{5}LB^{2}MU^{1}$	Br^{2}	10/0	NA	NA	NA	33C	76°45'	52°18'
398	2-3	U R / 7 3	7 V / 5	5 E / 3	7 S / 2	SU $6^{5}7^{5}$	$fR^{5}LB^{3}MU^{2}$	-	8/2	NA	3	PAL(1)	33C	76°35'	52°20'

(1) Plaine d'argile

EV : Lac Evans

399	2-3	H R / 6 4	O / 5	6 V / 3	1 V / 2	SU $1^{5}7^{5}$	fR^{6}LB^{4}	-	10/0	NA	NA	NA	33C	76°55'	52°25'
400	1-2	U / 10	7 S / 5	6 V / 3	7 V / 2	SU $6^{6}2^{2}1^{2}$	fR^{5}MU^{3}LB^{2}	-	10/0	NA	NA	NA	33C	77°25'	52°20'
401	1-2	U R / 7 3	7 V / 5	7 S / 3	1 D / 2	SU $6^{8}2^{2}$	fR^{4}MU^{4}LB^{2}	-	10/0	NA	NA	NA	33C	77°55'	52°20'
402	1-2	H / 10	O / 6	6 V / 4		SU 6^{10}	fR^{6}LB^{3}MU^{1}	-	8/2	3	NA	HRL	33C	77°40'	52°22'
403	1-2	U R / 7 3	5 P / 5	6 V / 3	7 V / 2	SU $6^{7}1^{3}$	fR^{6}MU^{3}LB^{1}	-	10/0	NA	NA	NA	33D	78°13'	52°22'
155	1-3	U R / 7 3	7 V / 5	6 V / 3	7 S / 2	SU 3^{10}	LB^{4}fR^{3}MU^{3}	-	10/0	NA	NA	NA	33C	77°20'	52°12'
940	1-3	U R / 6 4	7 V / 5	6 V / 4	1 D / 1	SU $6^{5}3^{3}7^{2}$	fR^{3}MU^{3}LB^{2}	Br^{2}	10/0	NA	NA	NA	32N	77°30'	51°35'
941	2-3	R U / 6 4	1 D / 5	7 V / 3	1 V / 2	SU $3^{6}6^{4}$	fR^{6}MU^{3}LB^{1}	-	9/1	2	3	PTL/PRF	32N	76°50'	51°05'
942	2-4	H R / 6 4	1 V / 5	O / 3	6 V / 2	SU $7^{5}6^{5}$	fR^{5}LB^{3}FM^{2}	-	10/0	NA	NA	NA	32N	76°05'	51°45'
943	2-3	R U F / 5 3 2	5 P / 5	7 V / 3	1 P / 2	SU 6^{10}	fR^{6}LB^{3}MU^{1}	-	9/1	NA	2	PMF	32K	77°50'	50°40'
944	1-2	U F / 6 4	6 P / 5	7*V / 3	7 S / 2	SU 10^{10}	fR^{4}MU^{4}LB^{2}	-	10/0	NA	NA	NA	32M	79°00'	51°05'

FE : Ferland Highlands

731	2-5	R U H / 5 3 2	1V 1A / 6	2 H / 3	O / 1	GR $1^{4}5^{3}6^{3}$	FM^{4}FR^{3}FF^{2} / j j&r j&r	Ct^{1}	10/0	NA	NA	NA	22D	70°55'	48°15'

FG : Fort George

541	0-1	R U / 6 4	6 P / 5	7*V / 3	6 V / 2	SU 6^{10}	LB^{5}fR^{2}MU^{2}H^{1}	-	10/0	NA	NA	PRM	33D	78°53'	53°00'
542	0-1	R U / 6 4	O / 5	7 V / 3	6 H / 2	SU 6^{10}	LB^{4}fR^{3}MU^{2}H^{1}	-	10/0	NA	NA	PRM	33E	78°55'	53°35'
543	0-1	F R / 7 3	7*N / 5	O / 3	7 V / 2	SU 6^{10}	LB^{4}MU^{3}fR^{2}H^{1}	-	10/0	NA	NA	PRM	33E	78°55'	53°44'
544	0-1	U F / 6 4	4*T / 6	7 V / 3	6 H / 1	SU 6^{10}	LB^{5}fR^{3}A^{2}	-	7/3	NA	1	HCF	33E	78°57'	53°48'
545	0-1	R / 10	O / 5	7 V / 3	6 H / 2	SU 6^{10}	LB^{6}fR^{2}H^{2}	-	10/0	NA	NA	PRM	33E	79°05'	53°58'
546	0-1	U F / 6 4	O / 5	1 V / 3	7*N / 2	SU 6^{10}	LB^{4}fR^{3}MU^{3}	-	10/0	NA	NA	NA	33E	78°55'	53°57'

FU : Rivière aux Feuilles

851	2-3	R U / 6 4	O H / 4	1 H / 3	1 V / 3	SU $3^{4}7^{3}6^{3}$	LI^{6}DE^{3}MU^{1}	-	9/1	1	1	PRF/PRL	34I	72°45'	58°15'
852	2-3	R U H / 6 3 1	O H / 6	1 V / 3	1 A / 1	SU $8^{5}6^{4}7^{1}$	LI^{7}DE^{3}	-	8/2	2	NA	PRL	34G	74°30'	57°30'
853	1-2	U R / 5 5	1 D / 6	1 H / 3	7 V / 1	SU 6^{10}	LI^{7}DE^{1}MU^{1}LB^{1}	-	8/2	2	NA	PTL	34I	76°05'	57°45'
854	1-3	R U / 7 3	O H / 5	1 H / 3	7 V / 2	SU $6^{9}7^{1}$	LI^{5}DE^{2}MU^{2}LB^{1}	-	9/1	2	1	PRF/PRL	34I	76°05'	57°05'
855	2-3	R U / 7 3	1 A / 5	O H / 4	7 V / 1	SU $6^{8}8^{2}$	LI^{3}DE^{1}LB^{1}	Br^{5}	9/1	2	NA	PRL/PTL	34B	74°55'	56°55'
856	2-3	R U H / 6 3 1	1 H / 5	1 A / 3	1 V / 2	SU $6^{9}8^{1}$	LI^{7}DE^{2}LB^{1}	-	4/6	3	NA	PTL	34G	75°05'	57°15'
857	0-2	H M R / 4 3 3	O H / 6	8 L / 3	4*T / 1	SU $6^{7}3^{2}8^{1}$	DE^{5}LI^{3}LB^{1}A^{1}	-	9/1	NA	3	CCF	24L	71°59'	58°15'

GA : Mid Gatineau

28	2-5	R U H / 6 3 1	1 A / 5	1 V / 3	1 H / 2	GR $2^{5}8^{3}6^{2}$	FF^{4}FF^{3}FM^{2} / j m j&m	C^{1}	10/0	NA	NA	NA	31J	75°30'	46°30'
29	2-5	R U / 6 4	1 H / 5	1 A / 3	2 T / 2	GR $2^{8}6^{2}$	FM^{3}FF^{3}FF^{2}FR^{1} / m m j m	C^{1}	8/2	3	NA	HTL	31J	75°55'	46°35'
30	2-5	R / 10	1 A / 6	1 V / 3	1 H / 1	GR $1^{7}2^{3}$	FF^{5}FM^{4}FF^{1} / m m j	-	10/0	NA	NA	NA	31K	76°10'	46°30'

GE : Georges River

895	0-3	U/8 R/2	L/5 H	L/3 A	7 V/2	CH $1^{8}2^{2}$	$LB^{6}MU^{2}LI^{2}$	-	9/1	2	NA	PTL	24J	66°50'	58°05'
896	0-2	R/4 U/4 H/2	L/5 D	L/4 H	7 V/1	CH 1^{10}	$LI^{5}LB^{3}MU^{2}$	-	9/1	2	NA	PTL	24J	66°30'	58°15'
897	2-3	R H/7 3	L/6 A	L/3 V	8 L/1	CH 1^{10}	$LI^{7}LB^{2}DE^{1}$	-	9/1	2	NA	PTL	24G	66°05'	57°50'
898	0-5	H/5 R/4 U/1	O/6 H	L/3 V	8 L/1	CH 1^{10}	$LI^{4}LB^{2}A^{2}DE^{2}$	-	9/1	NA	1	CDF	24H	65°30'	57°40'
899	2-5	R/6 U/4	L/6 D	L/3 V	7 V/1	CH 1^{10}	$LB^{3}LI^{3}A^{2}DE^{1}$	Br^{1}	9/1	2	NA	PTL	24H	65°35'	57°05'
900	4-5	R/6 H/3 U/1	O/6 H	L/3 V	L/1 H	CH $2^{6}1^{2}3^{2}$	$DE^{4}LI^{3}LB^{2}$	Br^{1}	9/1	2	NA	HRL	24A	65°15'	56°15'
901	3-6	H/5 R/3 U/2	O/7 H	L/2 V	8 L/1	CH $3^{7}1^{2}2^{1}$	$DE^{3}LI^{3}LB^{2}A^{2}$	-	9/1	NA	1	CBF	24A	64°45'	56°30'
971	1-5	H/5 R/3 M/2	O/9 H	8 L/1		CH $1^{7}3^{3}$	$DE^{7}LI^{2}A^{1}$	-	9/1	2	NA	HRL	24I	65°30'	58°30'

GO : Lac aux Goélands

906	4-7	R/5 U/3 H/2	O/5 H	L/3 V	L/2 H	CH $2^{8}1^{2}$	$LB^{6}LI^{3}DE^{1}$	-	7/3	3	NA	PRL/PTL	24A	64°15'	56°15'
907	4-5	R/6 U/4	L/5 V	O/3 H	L/2 H	CH $3^{8}2^{2}$	$LB^{7}LI^{2}DE^{1}$	-	7/3	3	NA	PRL/PTL	23P	64°25'	55°55'
908	3-6	U/8 R/2	L/5 A	L/3 H	L/2 V	CH $3^{6}1^{4}$	$LB^{8}LI^{1}MU^{1}$	-	8/2	3	2	PTL/CCF	23P	64°20'	55°30'
909	3-7	H/6 R/3 U/1	O/5 H	L/3 V	8 L/2	CH $1^{4}2^{4}3^{2}$	$LB^{5}LI^{3}DE^{2}$	-	10/0	NA	NA	NA	23P	65°00'	55°30'
910	4-7	U/6 R/4	L/5 V	L/3 A	O/2 R	CH 1^{10}	$LB^{7}LI^{2}DE^{1}$	-	9/1	2	2	PRL/PRF	23P	65°25'	55°30'
911	4-6	R/7 H/2 U/1	L/5 V	L/3 D	O/2 H	CH $2^{5}1^{5}$	$LB^{7}LI^{2}MU^{1}$	-	9/1	2	NA	PRL	23P	64°45'	55°15'
912	4-6	U/7 F/2 R/1	L/7 D	7*V/2	2 H/1	CH $1^{6}3^{4}$	$LB^{6}MU^{2}LI^{2}$	-	9/1	2	NA	PRL	23I	64°30'	54°55'
913	4-6	U/7 F/2 R/1	L/7 H	L/2 D	7 V/1	CH 1^{10}	$LB^{7}LI^{2}MU^{1}$	-	8/2	2	NA	PRL	13M	63°45'	55°05'
914	4-7	R/5 U/3 H/2	O/6 H	L/2 A	L/2 H	CH 2^{10}	$LB^{7}LI^{2}MU^{1}$	-	7/3	3	NA	PRL	13M	63°45'	55°20'
964	5	R/5 U/3 H/2	O/6 H	L/2 A	L/2 H	CH 1^{10}	$LB^{5}LI^{3}DE^{2}$	-	10/0	NA	NA	NA	13L	63°59'	54°59'
967	6-7	R H/6 4	O/5 H	L/3 V	L/2 A	CH $5^{6}2^{4}$	$LB^{6}LI^{3}DE^{1}$	-	9/1	2	NA	PTL	13L	63°55'	54°40'
981	3-6	R/10	L/5 H	L/3 V	7*V/2	CH 1^{10}	$LB^{6}LI^{2}MU^{2}$	-	4/6	3	NA	PTL	23I	64°35'	54°45'

GUo : Gouin Reservoir Highlands

479	5-10	H/5 R/3 M/2	L/6 V	L/4 A		GR $1^{5}2^{3}5^{2}$	$\frac{FR^{9}FM^{1}}{m\ m}$	-	10/0	NA	NA	NA	22D	70°25'	48°55'
561	5-10	M/10	L/5 V	O/5		GR 8^{10}	$\frac{fR^{5}}{m}$	Ct^{5}	10/0	NA	NA	NA	22F	69°55'	49°05'
667	5-10	H R/6 4	L/6 V	L/2 H	2 H/2	GR $8^{5}1^{3}5^{2}$	$\frac{FR^{6}FM^{1}}{m\&j\ j}$	Ct^{3}	10/0	NA	NA	NA	32A	73°35'	48°35'
668	5-10	H R/6 4	L/7 V	O/3		GR 6^{10}	$\frac{fR^{5}}{m\&j}$	Ct^{5}	10/0	NA	NA	NA	32B	74°10'	48°45'
670	5-10	H/5 R/4 M/1	L/5 V	L/4 A	O/1	GR 5^{10}	$\frac{FR\ 8}{m\&j}$	Br^{2}	10/0	NA	NA	NA	22E	70°20'	49°35'
671	5-10	H/5 R/4 M/1	L/5 V	L/4 A	O/1	GR $8^{8}4^{1}6^{1}$	$\frac{FR^{10}}{m\&j}$	-	9/1	2	NA	HRL	22E	70°20'	49°20'

HA : Appalachian Highlands

97	3-8	M/10	L/6 A	L/4 V		GR 1^{10}	$\frac{FR^{9}}{j}$	Ct^{1}	10/0	NA	NA	NA	21N	69°40'	47°10'
99	2-6	M/10	L/6 V	L/3 A	O/1	AP 5^{10}	$\frac{FM^{10}}{m}$	-	10/0	NA	NA	NA	21N	69°00'	47°15'
100	2-5	M/10	L/6 V	L/3 A	O/1	AP 5^{10}	$\frac{FF^{10}}{m}$	-	10/0	NA	NA	NA	21N	68°40'	47°25'
102	2-5	R H/6 4	L/7 V	L/2 A	7 N/1	AP $5^{5}1^{5}$	$\frac{FF\ 6FR^{3}FM^{1}}{m\&j\ j\ j}$	-	10/0	NA	NA	NA	22C	68°50'	48°05'
103	2-5	R H/6 4	L/8 V	L/2 A		AP 1^{10}	$\frac{FF\ 5FR^{4}FM^{1}}{m\&j\ j\ j}$	-	10/0	NA	NA	NA	21N	68°30'	47°45'

HE : Lac Henriette

902	4–6	H/6 U/3 R/2	O/5 H/4	1/1 H/4	1/1 V/2	CH $1^{7}3^{3}$	LI^{5}DE^{3}A^{1}MU^{1}	–	9/1	2	NA	PRL	24A	64°15'	56°45'
903	5–8	H/4 R/4 U/2	1/1 V/5	O/6 H/4	8/1 L/1	CH 1^{10}	LI^{7}DE^{3}	–	9/1	2	NA	CCL	24A	64°05'	56°55'
904	4–8	H/6 R/3 U/1	O/5 H/5	8/1 L/3	1/1 V/2	CH 1^{10}	LI^{7}DE^{2}A^{1}	–	9/1	2	NA	PTL/HRL	24H	64°45'	57°30'
905	4–8	R/5 H/3 U/2	O/7 H/7	1/1 V/2	8/1 L/1	CH 1^{10}	LI^{7}DE^{2}MU^{1}	–	9/1	2	NA	PTL/PRL	24H	64°15'	57°30'
975	0–10	M/9 U/1	O/8 H/8	8/1 L/1	4*P/1	CH $1^{7}3^{3}$	DE^{9} fR/m^{1}	–	9/1	NA	2	CDF	24I	64°30'	58°30'

HI : Lac Hippocampe

649	4–10	U/6 R/4	1/5 H/5	1/1 D/4	1/1 A/1	SU $6^{6}9^{2}7^{2}$	LB^{4}fR^{4}	Br^{2}	10/0	NA	NA	NA	32P	72°35'	51°45'
650	5–10	U/10	1/1 H/6	1/1 A/3	1/1 D/1	SU $9^{8}7^{2}$	LB^{6}fR^{4}	–	9/1	2	NA	HTL	32P	72°10'	51°55'
651	5–10	U/7 R/3	1/1 H/5	1/1 A/3	1/1 D/2	SU $9^{9}7^{1}$	LB^{4}fR^{3}	Br^{3}	9/1	2	NA	HTL	23D	71°30'	52°05'
653	5–10	U/7 R/3	1/1 H/5	2/1 H/3	1/1 A/2	SU $3^{6}9^{4}$	LB^{5}fR^{3}	Br^{2}	9/1	2	NA	HTL	23D	70°45'	52°05'
654	5–10	U/6 R/4	1/1 D/5	1/1 A/3	1/1 H/2	SU 3^{10}	fR/m&r ^{2}LB^{2}	Br^{6}	10/0	NA	NA	NA	23D	70°25'	52°10'
655	5–10	U/6 R/4	1/1 H/6	1/1 D/3	1/1 A/1	SU $6^{5}3^{5}$	fR^{3}/r LB^{2}	Br^{5}	9/1	2	NA	HTL	23D	70°05'	52°10'
656	5–10	R/7 H/3	1/1 H/6	1/1 A/3	1/1 V/1	SU $2^{7}3^{2}4^{1}$	fR/m&j&r ^{4}LB^{3}MU^{2}	Br^{1}	10/0	NA	NA	NA	23C	69°00'	52°05'
657	5–10	R/5 H/5	1/1 H/4	1/1 A/4	1/1 V/2	SU $2+1^{10}$	fR^{3}/m LB^{3}MU^{3}	Br^{1}	10/0	NA	NA	NA	23C	68°15'	52°25'
658	5–10	H/6 R/4	1/1 V/5	1/1 H/3	1/1 A/2	SU $2+1^{8}Fe^{2}$	fR^{4}/m&j LB^{3}MU^{3}	–	9/1	3	NA	HTL	23C	68°00'	52°00'
659	5–10	H/5 R/3 M/2	1/1 A/5	1/1 V/3	1/1 H/2	SU $2+1^{8}9^{2}$	fR/m&r ^{5}LB^{3}	Br^{2}	10/0	NA	NA	NA	23C	70°00'	52°00'
660	3–10	H/6 R/4	1/1 V/4	1/1 A/3	1/1 H/3	SU $3^{7}2+1^{3}$	fR^{10}/j&m	–	10/0	NA	NA	NA	22N	68°27'	51°55'
661	5–10	R/7 U/3	1/1 V/5	1/1 D/3	1/1 H/2	SU 7^{10}	LB^{6}fR^{4}	–	10/0	NA	NA	NA	32P	72°45'	51°45'

HL : Upper Laurentians

263	5–12	R/6 H/4	1/1 A/5	1/1 V/3	2/1 H/2	GR $5^{7}8^{3}$	FR^{10}/j&m&r	–	10/0	NA	NA	NA	21M	71°25'	47°35'
264	5–12	H/6 R/4	1/1 V/5	1/1 A/3	2/1 H/2	GR $8^{8}5^{2}$	FR^{9}/r&j&m	Br^{1}	10/0	NA	NA	NA	21M	70°55'	47°45'
265	5–12	R/6 H/3 U/1	2/1 H/5	1/1 V/4	4/1 T/1	GR $5^{7}4^{3}$	FR^{8}/m&r	Ct^{2}	10/0	NA	NA	NA	21M	71°00'	47°35'
266	5–12	M/5 H/4 R/1	1/1 A/5	1/1 V/4	4/1 T/1	GR $8^{5}5^{5}$	FR^{10}/j&r	–	10/0	NA	NA	NA	21M	71°00'	47°25'
267	5–10	M/10	O/5	1/1 V/4	2/1 H/1	GR 5^{10}	FR^{10}/j&m	–	10/0	NA	NA	NA	21M	70°40'	47°45'

HOm : Southern Upper Outaouais

71	0–6	M/6 H/4	1/1 A/6	1/1 V/4		GR $6^{5}1^{3}2^{2}$	FM^{5}/m&j FF^{3}/m FR^{2}/m&j	–	8/2	3	NA	HRL	31L	78°40'	46°40'

HOs : Northern Upper Outaouais

73	0–6	H/6 M/4	1/1 V/6	1/1 A/4		GR $6^{8}2^{1}1^{1}$	FM^{7}/j&m FF^{2}/j&m FR^{1}/j&m	–	9/1	3	NA	HRL	31M	79°10'	47°05'
74	1–6	H/6 M/4	1/1 A/5	1/1 V/5		GR $1^{4}6^{3}2^{3}$	FM^{5}/m&j FF^{3}/j&m FR^{2}/m	–	9/1	3	NA	HRL	31L	78°00'	46°45'

HR : Harbour

796	2–5	R/10	1/1 H/5	7/1 V/3	1/1 V/2	GR A^{10}	fR^{5}/m KR–LI^{3}MU^{2}	–	10/0	NA	NA	NA	12P	57°07'	51°55'

HS : Upper Saguenay Lowlands

141	1–5	R/4 U/4 H/2	1/1 V/7	1/1 A/2	4*T/1	GR $4^{6}2^{2}1^{2}$	FM^{7}/j&r FF^{2}/r	C^{1}	10/0	NA	NA	NA	22D	71°25'	48°25'
142	0–2	R/6 H/3 U/1	O/5	5/1 E/3	5*E/2	GR 4^{10}	FF^{5}/j&r FM^{1}/r&j	C^{4}	9/1	NA	2	PMF	22D	71°25'	48°35'
143	0–2	F/4 U/4 HR/2	5/4 P	5/4 E	O/2	GR $5^{6}1^{3}2^{1}$	FM^{1}/j FF^{1}/j	C^{8}	9/1	NA	2	HRF	22D	71°00'	48°25'

HS : Upper Saguenay Lowlands

144	1-2	F U / 7 3	3 T / 6	7 N / 4		GR $4^4 5^2$ SU 10^6	FR^5 FF^3 / j j	C^2	10/0	NA	NA	NA	22D	71°10'	48°35'
145	2-5	R H / 7 3	1 V / 4	2 H / 4	O / 2	GR $4^6 5^4$	FF^4 FM^3 FR^3 / j j j	-	10/0	NA	NA	NA	22D	71°10'	48°40'
146	0-3	R M / 6 4	1 V / 4	O / 4	5*E / 2	GR 1^{10}	FM^{10} / j	-	5/5	NA	2	HRF	22D	70°48'	48°23'

JC : Jacques-Cartier

781	9-12	M R / 5 5	O* / 4	O / 4	1 V / 2	AP 1^{10}	$DE^7 LI^1 H^1 KR^1$	-	10/0	NA	NA	NA	22B	66°17'	48°47'
782	9-15	M / 10	O* / 4	O / 4	1 V / 2	AP $1^4 7^3 3^3$	$DE^4 KR^3 LI^2 H^1$	-	10/0	NA	NA	NA	22A	66°00'	48°57'

KA : Rivière Kanaaupscow

676	0-2	U F / 6 4	7*N / 5	O / 3	6 V / 2	SU 6^{10}	$LB^6 MU^3 LI^1$	-	9/1	2	1	PML/PMF	33L	78°45'	54°15'
677	1-3	R H / 6 4	O / 6	6 V / 3	1 V / 1	SU $8^5 6^5$	$LB^6 DE^2 FR^1 LI^1$	-	8/2	3	NA	HRL	33L	78°20'	54°35'
678	1-3	R / 10	1 V / 6	O / 3	6 V / 1	SU $6^8 7^2$	$LB^7 FR^1 MU^1 DE^1$	-	8/2	2	NA	HRL	33K	77°10'	54°55'
679	1-2	U R H / 5 4 1	6 T / 5	6 V / 3	O / 2	SU $6^7 8^3$	$LB^7 MU^1 DE^1 FR^1$	-	10/0	NA	NA	NA	33K	78°00'	54°45'
680	1-3	R / 10	1 V / 5	6 V / 3	O / 2	SU $8^7 6^3$	$LB^8 MU^1 FR^1$	-	9/1	3	NA	HRL	33K	77°45'	54°20'
681	1-2	U R H / 5 4 1	6 T / 5	6 V / 3	O / 2	SU 8^{10}	$LB^8 MU^1 DE^1$	-	9/1	2	NA	HRL	33L	78°00'	54°18'
682	2-5	U / 10	6 T / 6	2 T / 4		SU $6^8 1^2$	$LB^5 FR^3$	Br^2	9/1	2	NA	PTL	33N	76°40'	55°05'
683	1-3	R H / 7 3	5 E / 5	O / 3	6 T / 2	SU $7^6 6^4$	$LB^7 FR^3$	-	9/1	NA	2	PMF	33N	77°00'	55°20'
684	2-5	H R / 6 4	1 V / 5	O / 4	1 A / 1	SU $6^5 7^5$	$LB^7 FR^1 DE^1 LI^1$	-	8/2	2	NA	HRL	33N	75°05'	55°05'
685	1-3	U R / 6 4	5 P / 5	1 V / 3	6 V / 2	SU 6^{10}	$LB^6 FR^3 MU^1$	-	9/1	1	NA	HRL	33K	77°25'	54°30'
686	1-3	R / 10	1 V / 5	O / 3	7 V / 2	SU $7^5 6^3 8^2$	$LB^8 DE^1 MU^1$	-	8/2	2	NA	HRL	33K	77°15'	54°10'
687	1-3	U R / 7 3	1 R / 5	7 V / 3	1 A / 2	SU 7^{10}	$LB^7 FR^2 MU^1$	-	8/2	3	NA	HTL	33K	76°45'	54°15'
688	1-3	H R M / 6 3 1	O / 5	1 V / 3	1 A / 2	SU 7^{10}	$LB^8 FR^1 DE^1$	-	9/1	2	NA	HRL	33K	76°30'	54°05'
689	2-5	H R / 6 4	1 V / 5	1 H / 3	1 A / 2	SU $7^6 6^4$	$LB^7 FR^2$	Br^1	8/2	2	NA	HRL	33J	75°15'	54°30'
690	2-5	U R / 7 3	1 H / 5	1 V / 3	1 A / 2	SU $7^8 6^2$	$LB^7 LI^3$	-	8/2	2	NA	HTL	33O	75°20'	55°20'
691	2-5	R / 10	1 V / 5	1 D / 3	1 H / 2	SU $6^6 7^4$	$LB^7 FR^1 LI^1$	Br^1	8/2	2	NA	HTL	33J	74°45'	55°00'
692	1-3	R / 10	1 V / 5	O / 3	7 V / 2	SU $7^6 6^4$	$LB^8 FR^2$	-	8/2	3	NA	HRL	33F	76°15'	53°58'
694	2-5	R H / 7 3	1 A / 5	1 V / 3	1 H / 2	SU $6^5 7^5$	$LB^8 FR^1$	Br^1	8/2	2	NA	HTL	33J	74°30'	54°05'
695	2-5	R U / 6 4	1 D / 5	1 H / 4	1 A / 1	SU $7^8 6^2$	$LB^8 FR^1$	Br^1	7/3	2	NA	HTL	33I	73°40'	54°40'
696	2-5	U / 10	1 H / 6	1 A / 3	1 D / 1	SU $6^7 7^3$	$LB^5 LI^2$	Br^3	8/2	2	NA	HTL	33I	72°25'	54°45'
697	2-5	H R / 6 4	1 V / 5	1 H / 3	1 A / 2	SU 7^{10}	$LB^9 FR^1$	-	8/2	2	NA	HTL	33I	72°50'	54°53'
698	2-6	R U / 6 4	1 D / 5	1 H / 4	1 A / 1	SU $7^5 6^5$	$LB^8 FR^2$	-	9/1	2	NA	HTL	33I	73°35'	54°05'
699	2-6	U / 10	1 D / 5	1 H / 3	1 A / 2	SU $6^8 7^2$	$LB^8 MU^1 FR^1$	-	6/4	2	NA	HTL	33I	73°00'	54°20'
700	2-6	R H U / 5 3 2	1 V / 5	1 H / 3	1 A / 2	SU 6^{10}	$LB^5 MU^1 LI^1$	Br^3	9/1	2	NA	HTL	23L	71°55'	54°30'
798	1-3	U R / 7 3	5 E / 5	7 V / 3	4*T / 2	SU 7^{10}	$LB^5 FR^3 MU^2$	-	9/1	NA	2	PMF	33K	76°10'	54°10'
934	1-4	H R / 7 3	O / 6	1 V		SU 6^{10}	$LB^8 DE^2$	-	9/1	2	NA	HRL	33K	76°55'	54°40'

KB : Kegashka-Blanc Sablon Coast

789	0-1	R 6 U 4	O 6	7 V 2	6 V 2	GR $1^5 2^3 8^2$	LI-DE-KR ^9_mFR^1	-	10/0	NA	NA	PRM	12J	59°20'	50°35'
790	0-3	H 10	O 10			GR 6^{10}	LI-DE-KR ^9_mFR^1	-	10/0	NA	NA	HRM	12J	59°00'	50°50'

KO : Kovic

801	0-2	U 7 R 3	O 7 H	6 V 2	7 V 1	CH 1^{10}	DE^{6}LI^{2}MU^{1}A^1	-	7/3	0/2	NA	PRL/BRM	35K	77°30'	61°30'
802	0-2	U 6 R 4	O 7 R	6 V 2	7 V 1	CH 4^{10}	DE^{6}LI^{2}MU^{1}A^1	-	9/1	0/2	NA	PRL/PRM	35C	77°10'	59°50'

LA : Lower Laurentians

118	2-5	R 6 H 4	1 A 4	1 V 3	2 T 3	GR 4^{10}	FM^6_mFR$^2_{j\&m}$	Ct^2	10/0	NA	NA	NA	22D	71°35'	48°55'
119	1-5	F 4 R 3 H 3	2 T 5	1 A 4	1 V 1	GR 4^{10}	FM^5_mFF^3_jFR$^2_{j\&m}$	-	10/0	NA	NA	NA	22D	71°25'	48°55'
120	1-6	R 6 H 4	1 A 5	1 V 3	2 T 2	GR $4^8 1^2$	FM $^7_{m\&j}$FF $^2_{j\&r}$FR $^1_{j\&r}$	-	9/1	3	NA	HTL	22D	71°10'	48°45'
121	2-5	H 6 R 3 M 1	1 V 5	1 A 4	2 T 1	GR $2+1^5 6^3 4^2$	FM$^{10}_{j\&m}$	-	10/0	NA	NA	NA	22D	71°40'	48°18'
122	2-5	H 6 R 2 U 2	1 V 5	1 A 4	2 T 1	GR $8^4 1^3 5^3$	FM^{6}FR^3_rFF^1_m	-	10/0	NA	NA	NA	22D	70°38'	48°12'
123	1-5	H 6 R 4	1 V 5	1 A 3	2 T 2	GR $2+1^5 5^5$	FM^8_jFF^2_j	-	10/0	NA	NA	NA	22D	70°00'	48°05'
124	2-6	M 10	1 A 5	1 V 4	2 T 1	GR $5^6 8^2 1^2$	FR^7_jFM^3_m	-	10/0	NA	NA	NA	21M	70°25'	47°48'
125	1-5	H 6 R 4	1 A 6	2 T 4		GR $4^4 2^3 8^3$	FM^8_jFR^1_jFF^1_r	-	10/0	NA	NA	NA	21M	70°30'	47°40'
126	2-8	H 6 M 4	1 V 5	1 A 3	2 T 2	GR $8^5 5^5$	FM $^4_{j\&m}$FF ^4_mFR ^2_j	-	10/0	NA	NA	NA	21M	71°25'	47°05'
127	1-5	H 5 R 3 M 2	1 V 5	1 A 3	2 H 2	GR 1^{10}	FF^3_jFR$^3_{j\&r}$FM$^2_{j\&m}$	Ct^2	10/0	NA	NA	NA	22C	69°40'	48°30'

LAm : Mid Laurentians (Charlevoix-North-Shore)

188	2-5	R 6 H 4	1 A 5	4 T 3	2 H 2	GR 1^{10}	FM $^5_{m\&j}$FR $^3_{m\&j}$FF^2_j	-	10/0	NA	NA	NA	32A	72°25'	48°05'
189	2-5	R 10	1 A 5	1 V 3	2 T 2	GR $6^5 5^3 1^2$	FM $^7_{j\&m}$FR^2_jFF^1_j	-	10/0	NA	NA	NA	31P	72°00'	48°00'
190	2-5	H 5 R 3 U 2	1 V 5	1 A 3	4 T 2	GR 6^{10}	FM^5_jFR^3_jFF^2_j	-	10/0	NA	NA	NA	32A	72°00'	48°10'
191	2-5	H 5 R 3 U 2	1 V 5	1 A 3	2 H 2	GR $8^5 6^3 2^2$	FM $^5_{m\&r\&j}$FR $^3_{j\&r\&m}$FF $^2_{j\&m}$	-	10/0	NA	NA	NA	22D	71°10'	48°10'
192	2-7	H 6 R 4	1 V 5	1 A 3	2 T 2	GR $5^6 6^2 2^2$	FM^4_jFR$^3_{j\&r}$FF$^3_{m\&j}$	-	10/0	NA	NA	NA	21M	71°55'	47°40'
193	1-6	M 7 R 3	1 V 5	O 3	1 A 2	GR $1^6 8^2 6^2$	FR $^8_{r\&j\&m}$FF^1_r	Ct^1	10/0	NA	NA	NA	22F	69°30'	49°05'
194	0-5	R 5 H 3 U 2	1 A 4	1 V 4	4*T 2	GR $4^5 2^3 1^2$	FM $^4_{j\&r}$FR $^4_{j\&m}$	Ct^2	9/1	3	NA	HTL	22F	68°25'	49°40'
195	1-5	M 5 R 3 H 2	1 V 5	O 3	2 T 2	GR $2^5 1^3 4^2$	FR $^9_{j\&m}$FM^1_r	-	10/0	NA	NA	NA	22G	67°45'	49°25'
196	0-2	R 6 U 4	7 N 4	O 3	6 T 3	GR $4^5 5^3 6^2$	FR $^3_{r\&j}$MU^3	Ct^{2}Br^2	10/0	NA	NA	PSM	22J	66°55'	50°05'
197	1-3	R 6 H 4	1 V 5	O 3	6 V 2	GR $6^5 4^5$	FR^7_mMU^1	Ct^2	10/0	NA	NA	NA	22G	67°10'	49°55'
198	2-6	M 5 H 4 R 1	1 V 5	1 A 4	1 H 1	GR $4^9 6^1$	FR^5_mFR$^3_{j\&r}$FF^1_j	Ct^1	10/0	NA	NA	NA	22E	71°10'	49°10'
199	2-6	R 6 U 4	1 H 5	1 A 3	2 H 2	GR $4^8 5^1 1^1$	FR^4_jFM^3_mFR^2_m	Ct^1	9/1	3	NA	HTL	22D	71°10'	48°55'

LAs : Upper Laurentians (Charlevoix-North-Shore)

206	2-8	M 6 H 4	1 V 6	1 H 2	1 A 2	GR 4^{10}	FR^4_jFM^2_mFF^2_j	Ct^2	10/0	NA	NA	NA	22E	71°20'	49°05'
207	5-10	H 6 M 4	1 V 5	1 A 4	O 1	GR $4^4 5^4 1^2$	FR $^9_{j\&m}$FM^1_j	-	9/1	2	NA	HRL	22D	70°30'	48°40'
208	5-10	M 6 H 4	1 V 10			GR $8^5 1^5$	FR$^{10}_{m\&r}$	-	10/0	NA	NA	NA	22C	69°55'	48°45'
209	5-10	M 6 H 4	1 V 10			GR 4^{10}	FR$^{10}_m$	-	10/0	NA	NA	NA	22E	71°12'	49°05'
211	5-10	M 6 H 4	1 V 10			GR $4^5 5^3 1^2$	FM$^{10}_m$	-	10/0	NA	NA	NA	22D	71°18'	48°52'
212	5-10	M 5 H 3 R 2	1 V 5	1 A 3	O 2	GR $5^6 8^2 1^2$	FR $^9_{j\&r}$FM $^1_{j\&r}$	-	10/0	NA	NA	NA	21M	71°30'	47°10'
213	5-10	H 6 R 4	1 A 5	1 V 4	4 T 1	GR $5^6 8^4$	FR$^{10}_{j\&r}$	-	10/0	NA	NA	NA	21M	71°20'	47°20'

LAs : Upper Laurentians (Charlevoix-North-Shore)

214	5–10	R H / 6 4	1 A / 5	1 V / 3	2 H / 2	GR 5^{10}	FR / r ^{10}	–	10/0	NA	NA	NA	21M	71°35'	47°25'
215	5–10	H R / 6 4	1 V / 5	1 A / 3	2 H / 2	GR $5^{6}8^{4}$	FR / r&j ^{8} FM / r ^{2}	–	10/0	NA	NA	NA	21M	71°20'	48°00'
216	5–10	R H / 6 4	1 A / 5	1 V / 3	4 T / 2	GR $5^{6}8^{2}6^{2}$	FR / r ^{6} FR / m ^{2} FM / m&r ^{1}	Ct^{1}	10/0	NA	NA	NA	21M	71°25'	47°45'
217	5–10	M / 10	O / 6	1 V / 4		GR $1^{5}8^{5}$	FR / m&r ^{9} FM / m&j ^{1}	–	10/0	NA	NA	NA	21M	70°40'	47°55'
218	5–10	M / 10	1 V / 6	O / 4		GR $5^{7}8^{3}$	FR / j&m ^{6} FM / j&r ^{4}	–	10/0	NA	NA	NA	22D	70°25'	48°00'
219	5–10	M / 10	1 V / 6	O / 4		GR $5^{5}8^{5}$	FR / j ^{10}	–	10/0	NA	NA	NA	22D	70°10'	48°10'
221	5–10	M / 10	O / 6	1 V / 3	1 A / 1	GR $8^{6}2^{4}2^{2}$	FR / m&r ^{7} FM / j&m ^{3}	–	10/0	NA	NA	NA	21M	70°45'	47°30'
222	5–12	H M / 6 4	1 A / 6	1 V / 4		GR $8^{5}2^{5}$	FR / j&r ^{10}	–	10/0	NA	NA	NA	21M	70°45'	47°20'

LD : Pointe Le Droit

915	4–9	M H R / 5 3 2	O H / 9	8 L / 1		CH $1^{5}3^{5}$	DE ^{9}A ^{1}	–	10/0	NA	NA	NA	24P	64°40'	59°20'
916	0–5	M H R / 4 3 3	O H / 9	8 L / 1		CH $3^{7}1^{3}$	DE ^{8}A ^{1}LI ^{1}	–	10/0	NA	NA	HRM	24P	65°05'	59°05'
917	0–5	H M R / 5 3 2	O H / 9	8 L / 1		CH $1^{7}3^{3}$	LI ^{5}DE ^{4}A ^{1}	–	10/0	NA	NA	HRM	24P	64°55'	59°55'

LE : Lac Legrand

701	4–10	H M R / 6 3 1	1 V / 5	1 A / 4	1 H / 1	SU $6^{5}7^{3}8^{2}$	LB ^{4}LI ^{4}fR ^{2}	–	9/1	2	NA	HTL	23L	71°00'	54°55'
702	3–10	R H U / 5 3 2	1 V / 5	1 H / 3	1 A / 2	SU $6^{8}7^{2}$	LB ^{7}MU ^{1}LI ^{1}fR ^{1}	–	9/1	2	NA	HTL	23L	71°20'	54°40'
703	4–10	U R / 7 3	1 H / 5	1 A / 3	7*V / 2	SU $8^{6}6^{4}$	LB ^{7}fR ^{2}MU ^{1}	–	8/2	2	NA	HTL	23L	70°45'	54°35'
704	2–6	U / 10	1 D / 5	1 H / 4	2 R / 1	SU $6^{8}7^{2}$	LB ^{8}fR ^{1}LI ^{1}	–	9/1	2	NA	HTL	33I	72°15'	54°05'
705	2–6	H R M / 5 3 2	1 V / 6	1 A / 3	1 H / 1	SU $6^{8}9^{2}$	LB ^{5}fR ^{3}LI ^{1}	Br^{1}	10/0	NA	NA	NA	33I	72°35'	54°05'
706	2–7	H U / 7 3	1 A / 5	1 V / 3	1 D / 2	SU 7^{10}	LB ^{8}fR ^{2}	–	9/1	2	NA	HTL	23L	71°50'	54°05'
707	2–5	U / 10	1 H / 6	1 D / 3	1 A / 1	SU $7^{6}6^{4}$	LB ^{8}MU ^{1*}fR ^{1}	–	8/2	2	NA	PTL	23L	71°50'	54°20'
708	5–10	M H / 6 4	1 V / 5	1 A / 3	O / 2	SU $8^{4}7^{3}6^{3}$	LB ^{4}LI ^{3}fR ^{2}	Br^{1}	9/1	2	NA	HRL	23L	71°00'	54°10'
709	5–10	R U M / 5 3 2	1 H / 5	1 A / 3	1 V / 2	SU $7^{4}6^{4}8^{2}$	LB ^{8}LI ^{1}fR ^{1}	–	8/2	2	NA	HTL	23E	70°10'	53°55'
710	5–10	U R / 7 3	1 H / 5	7*V / 3	1 A / 2	SU $3^{4}6^{3}7^{3}$	LB ^{5}MU ^{2}fR ^{2}	Br^{1}	8/2	3	NA	HTL	23F	69°10'	53°50'
711	5–10	U F R / 5 4 1	7*V / 5	1 H / 3	1 A / 2	SU $6^{7}6^{4}$	LB ^{7}MU ^{3}	–	9/1	2	NA	PTL	23F	68°40'	54°00'
712	5–10	U H / 6 4	1 A / 5	7*V / 3	1 V / 2	SU $8^{5}6^{3}7^{2}$	LB ^{5}MU ^{2}fR ^{2}LI ^{1}	–	8/2	2	NA	PTL	23G	67°55'	53°40'
713	5–10	H R / 6 4	1 A / 6	1 V / 4		SU $7^{5}6^{3}8^{2}$	LB ^{6}fR ^{2}MU ^{1}LI ^{1}	–	10/0	NA	NA	NA	23F	68°10'	53°55'

LM : Lac Lemoyne

880	0–2	U R / 7 3	1 A / 5	4*P / 3	7 V / 2	CH $3^{6}5^{2}4^{2}$	LB ^{4}fR / m ^{3}MU ^{2}DE ^{1}	–	9/1	NA	1	PTF	24F	69°30'	57°40'
881	0–2	U R / 6 4	1 H / 5	7 V / 3	O / 2	CH $1^{8}3^{2}$	LB ^{4}LI ^{3}MU ^{1}A ^{1}DE ^{1}	–	9/1	1	1	PTL/PTF	24F	68°15'	57°45'
882	5–6	M R U / 4 4 2	O H / 4	1 A / 3	1 H / 3	CH $3^{7}Fe^{3}$	LB ^{4}A ^{2}fR / m ^{2}DE ^{1}MU ^{1}	–	9/1	2	2	PTL/HRF	24C	69°05'	56°15'
883	0–7	R H / 6 4	O R / 4	1 V / 3	1 H / 3	CH $4^{4}3^{3}5^{3}$	LB ^{4}DE ^{2}fR / m ^{2}A ^{2}	–	9/1	3	NA	PTL/HRL	24F	68°45'	57°15'
884	2–3	U R / 6 4	1 H / 6	1 V / 3	7 V / 1	CH $3^{6}1^{3}5^{1}$	LB ^{5}LI ^{3}fR / m ^{2}	–	9/1	3	NA	PTL	24F	68°30'	57°15'
885	1–3	R U / 6 4	1 D / 6	1 H / 3	1 V / 1	CH $1^{9}3^{1}$	LB ^{4}fR / m ^{3}LI ^{2}MU ^{1}	–	9/1	2	NA	PTL	24G	67°45'	57°30'
886	0–3	U R F / 7 2 1	1 A / 6	4*P / 3	7 V / 1	CH 1^{10}	fR / m ^{6}LB ^{3}LI ^{1}	–	9/1	NA	2	PTF	24G	67°30'	57°45'

LM : Lac Lemoyne

887	1-3	U/6 R/4	1/7 H	7/2 V	1/1 A	CH $1^{7}2^{3}$	LB^{6} fR/m ^{2}LI^{1}	Br^{1}	8/2	2	NA	PTL	24G	66°45'	57°30'
888	1-3	U/6 R/4	1/6 H	1/3 A	O/1 H	CH $5^{6}3^{4}$	$A^{4}LB^{4}$ fR/m ^{2}	-	8/2	3	NA	PTL	24C	68°30'	56°30'
889	1-4	U/6 R/4	1/4 H	1/3 A	1/3 V	CH $3^{8}Fe^{2}$	LB^{4} fR/m $^{2}A^{2}$	Br^{2}	8/2	3	NA	PTL	24C	68°30'	56°10'
890	2-5	R/7 U/2 H/1	1/5 A	1/3 D	1/2 H	CH $3^{4}1^{4}4^{2}$	LB^{4} fR/m $^{4}A^{1}$	Br^{1}	9/1	2	NA	PTL	24B	67°30'	56°30'
891	2-4	R/6 U/4	1/6 H	1/3 D	7/1 V	CH $1^{8}3^{2}$	LB^{7} fR/m $^{2}A^{1}$	-	9/1	2	NA	PTL	24B	67°15'	56°45'
892	1-3	R/5 H/3 U/2	1/5 V	1/3 A	O/2 H	CH $1^{5}2^{3}3^{2}$	LB^{5} fR/m $^{2}A^{1}DE^{1}$	Br^{1}	9/1	2	3	PTF/PTL	24B	66°30'	56°00'
893	1-4	U/9 F/1	1/5 A	1/4 D	7/1 V	CH $1^{9}3^{1}$	fR/m $^{5}LB^{2}MU^{2}A^{1}$	-	9/1	2	NA	PTL	24B	66°15'	56°35'
894	4-5	U/6 R/4	1/5 H	1/3 D	1/2 V	CH $1^{7}3^{3}$	fR/m $^{4}A^{3}LB^{2}DE^{1}$	-	9/1	2	NA	PTL	24B	66°05'	56°15'
770	2-6	U/10	1/6 V	1/4 A		CH $4^{7}5^{3}$	$LB^{2}fR^{2}A^{2}DE^{2}$	Br^{2}	9/1	2	NA	PRL	24B	67°30'	56°02'
765	3-7	R/7 U/3	1/4 A	1/3 V	1/3 H	CH 3^{10}	fR/m $^{4}A^{3}LB^{2}LI^{1}$	-	10/0	NA	NA	NA	23O	66°05'	55°40'

LO : Pointe Louis-XIV

774	0-1	U/10	6/6 T	6/4 H		SU 6^{10}	$H^{5}A^{3}MU^{2}$	-	7/3	2	NA	PRL	33L	79°25'	54°35'
950	0-1	R/6 U/4	O*/5	6/3 T	6/2 V	SU 9^{10}	$H^{6}A^{3}LI^{1}$	-	10/0	NA	NA	PRM	33L	79°25'	54°50'

LT : Lac Timiscaming

72	0-3	U/10	4/4 P	4/4 E	1/2 V	SU $9^{5}7^{3}3^{2}$	FF/j ^{3}FM/j ^{2}FR/j ^{1}	C^{4}	9/1	3	NA	PML	31M	79°25'	47°30'

MA : Manitounuk Islands

734	0-2	R/6 U/4	O/6	6/3 V	6/1 T	SU 7^{10}	$DE^{4}LI^{3}LB^{2}fR^{1}$	-	10/0	NA	NA	NA	33N	77°55'	55°10'
735	0-2	R/10	6/6 T	6/4 E		SU 7^{10}	$fR^{6}DE^{2}LI^{1}H^{1}$	-	6/4	NA	1	PRF	33N	77°47'	55°17'
736	0-2	H/6 M/4	O/7	6/3 T		SU 7^{10}	$LI^{5}DE^{2}LB^{2}fR^{1}$	-	10/0	NA	NA	HRM	33N	77°40'	55°20'
737	0-1	R/6 U/4	6/5 T	6/4 E	6/1 V	SU 7^{10}	$LI^{4}fR^{3}LB^{2}DE^{1}$	-	10/0	NA	NA	PRM	33N	77°20'	55°30'
738	0-1	H/6 M/4	O*/7	6/3 T		SU 9^{10}	$LI^{6}DE^{3}LB^{1}$	-	10/0	NA	NA	HRM	33N	77°20'	55°35'
931	0-1	U/10	6/6 T	O*/4		SU 9^{10}	$LI^{4}fR^{2}LB^{2}DE^{2}$	-	10/0	NA	NA	PRM	33M	78°10'	55°08'
937	0-3	H/6 M/4	O*/10			SU 9^{10}	$LI^{9}LB^{1}$	-	10/0	NA	NA	NA	33N	76°50'	55°55'
972	0-4	R/5 M/3 H/2	O/6 R	6/3 V	8/1 L	SU 9^{10}	$DE^{8}LI^{2}$	-	10/0	NA	NA	PRM	34C	76°30'	56°15'
973	0-1	U/8 R/2	O/8 R	6/2 V		SU 9^{10}	$DE^{8}LI^{2}$	-	10/0	NA	NA	PRM	34C	76°45'	56°15'

ME : Summits of the Mégantic Chain and Mount Saint-Magloire

158	5-10	M/10	1/6 V	O/4		AP $5^{5}7^{5}$	FF/m ^{10}	-	10/0	NA	NA	NA	21E	71°50'	45°00'
159	5-10	M/10	1/6 V	O/4		AP 5^{10}	FF/j ^{6}FM/j ^{3}FR/j ^{1}	-	10/0	NA	NA	NA	21E	71°30'	45°00'
163	5-10	M/10	1/6 V	O/4		AP 5^{10}	FR/m ^{10}	-	10/0	NA	NA	NA	21E	70°20'	45°52'
164	5-10	M/10	1/10 V			AP 1^{10}	FM/m&j ^{8}FF/m ^{2}	-	10/0	NA	NA	NA	21L	70°25'	46°35'

MG : Groulx Hills

779	5-10	M/5 H/3 R/2	1/5 V	1/4 A	O/1	GR $4^{5}2+1^{5}$	fR/m ^{10}	-	10/0	NA	NA	NA	22M	70°25'	51°15'
780	5-12	M/5 H/3 R/2	O/5	1/4 V	1/1 H	GR $3^{8}2^{2}$	$LI-KR^{7}LB^{3}$	-	10/0	NA	NA	NA	22O	67°35'	51°35'
783	5-10	H/6 R/4	1/6 V	O/4		GR 4^{10}	fR/m ^{5}DE-LB-LI^{5}	-	10/0	NA	NA	NA	22P	64°55'	51°40'

MG : Groulx Hills

784	5-10	H R / 6 4	1 V / 6	O / 4		GR $4^{7}6^{3}$	DE-LB-LI^{4} fR^{3} / m	Br^{3}	10/0	NA	NA	NA	22P	64°25'	51°25'
953	5-11	M H / 6 4	1 V / 5	1 A / 3	O / 2	GR 4^{10}	DE^{8} fR^{2} / m	-	10/0	NA	NA	NA	22K	69°45'	50°55'

MI : Lac Mistassini

405	2-4	H R / 7 3	1 V / 5	1 A / 4	O / 1	SU $3^{7}6^{3}$	fR^{10}	-	9/1	2	3	HRL/HRF	32O	74°30'	52°00'
406	2-5	U R H / 5 4 1	1 A / 5	1 V / 3	1 H / 2	SU 3^{10}	$fR^{9}LB^{1}$	-	8/2	2	NA	HTL	33A	73°40'	52°05'
407	2-5	U R / 7 3	2 P / 5	4*P / 3	1 A / 2	SU 3^{10}	fR^{9}	Br^{1}	9/1	NA	3	PMF	32P	73°30'	52°00'
408	2-5	R U / 6 4	1 A / 5	1 V / 3	7 V / 2	SU $6^{6}3^{4}$	$fR^{4}LB^{3}MU^{1}$	Br^{2}	9/1	2	NA	PTL	32O	75°15'	51°40'
409	2-5	R U / 6 4	7 V / 5	1 V / 3	1 D / 2	SU 7^{10}	$fR^{5}LB^{3}MU^{2}$	-	9/1	2	NA	PTL	32O	75°55'	51°30'
410	2-5	U R / 7 3	2 H / 5	4*T / 3	7 N / 2	SU 7^{10}	$fR^{7}MU^{3}$	-	9/1	NA	2	RFF	32O	75°40'	51°30'
411	2-5	H R M / 6 3 1	1 V / 6	1 A / 4		SU $7^{6}6^{4}$	$fR^{9}LB^{1}$	-	9/1	2	NA	HRL	32O	74°30'	51°35'
413	2-5	R U / 6 4	1 A / 5	1 V / 3	1 D / 2	SU 6^{10}	fR^{5} MU^{1} / m&r	Br^{4}	9/1	2	NA	HTL	32O	74°40'	51°25'
414	2-5	M H R / 5 3 2	1 V / 5	1 A / 3	1 H / 2	SU $7^{5}6^{5}$	fR^{6}MU^{1} / j&m	Br^{3}	9/1	2	NA	HRL	32O	74°45'	51°15'
415	2-5	R U / 6 4	1 A / 5	1 D / 3	1 H / 2	SU 6^{10}	fR$^{6}LB^{2}MU^{1}$ / m&r	Br^{1}	8/2	2	NA	HTL	32O	74°25'	51°10'
416	2-5	H R M / 6 3 1	1 V / 5	1 A / 3	1 H / 2	SU 6^{10}	fR^{10} / m	-	9/1	2	NA	HRL	32J	74°45'	50°55'
418	2-5	H M R / 6 3 1	1 A / 5	1 V / 3	1 D / 2	SU $7^{6}6^{4}$	fR^{7} / r&j	Br^{3}	9/1	2	NA	HTL	32P	73°30'	51°30'
419	2-5	R U / 6 4	1 H / 6	1 A / 3	2 H / 1	SU $6^{6}7^{4}$	fR^{6} / m&j	Br^{4}	10/0	NA	NA	NA	32P	73°10'	51°30'
420	2-5	H R / 6 4	1 A / 5	1 V / 3	7 V / 2	SU $3^{4}6^{4}7^{2}$	$fR^{6}LB^{2}MU^{1}$	Br^{1}	9/1	2	NA	HTL	32O	75°55'	51°10'
421	2-5	U R / 6 4	1 D / 5	7 N / 3	1 A / 2	SU $6^{5}3^{3}7^{2}$	$fR^{5}MU^{3}$	Br^{2}	7/3	3	NA	PTL	32O	75°10'	51°15'
422	2-6	H R M / 5 3 2	1 A / 5	1 V / 4	1 H / 1	SU $6^{5}5^{3}7^{2}$	$fR^{9}LB^{1}$	-	10/0	NA	NA	NA	32J	74°45'	50°30'
423	2-5	R U / 6 4	1 A / 5	7 N / 3	1 V / 2	SU $3^{6}6^{4}$	$fR^{9}MU^{1}$	-	10/0	NA	NA	NA	32J	75°57'	50°45'
424	2-5	U R / 6 4	1 A / 5	1 D / 3	7 N / 2	SU $6^{8}3^{2}$	$fR^{4}MU^{3}LB^{1}$	Br^{2}	9/1	2	2	PTL/PTF	32J	75°35'	50°45'
425	2-5	U R / 7 3	2 H / 5	1 A / 3	7 N / 2	SU 6^{10}	fR^{7}MU^{3} / r&j	-	9/1	2	NA	PTL	32J	75°40'	50°30'
426	2-5	U R F / 5 3 2	1 H / 5	7 N / 3	1 A / 2	SU $6^{8}5^{2}$	fR^{7}MU^{3} / r&j	-	9/1	3	NA	PTL	32J	75°05'	50°10'
427	2-5	H R M / 5 3 2	1 V / 5	O / 3	1 A / 2	SU 6^{10}	fR^{10} / r&j	-	10/0	NA	NA	NA	32J	75°45'	50°20'
429	2-6	U R H / 5 4 1	1 A / 5	2 P / 3	7 N / 2	SU 6^{10}	fR^{6}MU^{2} / r&j	Br^{2}	9/1	3	NA	PTL	32J	74°35'	50°25'
430	2-6	H R M / 5 3 2	1 A / 5	1 V / 4	1 H / 1	SU 6^{10}	$fR^{6}LB^{1}MU^{1}$ / j	Br^{2}	9/1	2	NA	HTL	32J	74°50'	50°18'
431	2-5	H U R / 5 3 2	1 V / 5	4 P / 3	O / 2	SU $6^{6}3^{4}$	$fR^{9}MU^{1}$	-	10/0	NA	NA	NA	32K	76°05'	50°35'
432	2-5	H R M / 5 3 2	1 V / 5	O / 3	1 A / 2	SU 6^{10}	fR^{10} / r&m&j	-	10/0	NA	NA	NA	32K	76°05'	50°20'
433	2-5	U R / 6 4	1 A / 5	1 H / 3	7 N / 2	SU $6^{7}7^{3}$	fR^{6}MU^{2} / m&r&j	Br^{2}	7/3	3	NA	HTL	32J	74°40'	50°45'
434	2-5	H R M / 6 3 1	1 V / 5	1 A / 3	1 H / 2	SU $6^{5}5^{5}$	fR$^{8}LB^{1}$ / m&r	Br^{1}	9/1	2	NA	HTL	32J	74°15'	51°00'
435	2-5	R U / 6 4	1 D / 5	7*N / 3	1 H / 2	SU 9^{10}	$fR^{8}MU^{2}$ / m	-	6/4	3	NA	PTL	32I	73°20'	50°55'
436	2-7	R U / 7 3	1 D / 5	1 E / 3	1 H / 2	SU $6^{5}9^{3}7^{2}$	fR^{6} / m&j&r	Br^{4}	8/2	3	NA	PTL	32P	72°45'	51°30'
437	2-5	U R / 6 4	2 P / 5	2 T / 3	7 V / 2	SU $6^{5}9^{5}$	$fR^{4}MU^{1}$ / m	Br^{5}	10/0	NA	NA	NA	32P	72°55'	51°25'
438	4-8	H / 10	1 A / 5	1 E / 3	1 V / 2	SU $9^{5}6^{5}$	fR^{6} / r	Br^{4}	10/0	NA	NA	NA	32P	72°40'	51°25'

MI : Lac Mistassini

459	5-10	H R / 6 4	1 A / 5	1 V / 4	1 H / 1	GR $4^{7}2+1^{3}$	fR^{10} / m	-	10/0	NA	NA	NA	22M	70°30'	51°15'
462	4-8	M H U / 5 4 1	1 V / 5	1 A / 4	2 T / 1	GR $2+1^{10}$	FR^{6}fR^{4} / m m&r	-	10/0	NA	NA	NA	32I	72°20'	50°00'
464	5-10	R U H / 6 2 2	1 A / 6	1 H / 3	1 V / 1	GR 8^{10}	FR^{6}fR^{3}FM^{1} / m m&j m	-	10/0	NA	NA	NA	22L	71°45'	50°20'
465	5-10	U F / 7 3	1 H / 6	7*V / 3	2 H / 1	GR $2+1^{7}8^{3}$	fR^{9}MU^{1} / m&j	-	9/1	2	NA	HTL	22L	71°45'	50°40'
466	4-10	U R / 6 4	1 H / 5	1 A / 5		GR $8^{7}2+1^{3}$	fR^{9}fM^{1} / m&r m&j	-	9/1	3	3	HTL/CDF	22L	71°25'	50°35'
467	4-10	U R / 6 4	1 H / 7	1 A / 3		GR $2+1^{10}$	fR^{10} / j&r	-	10/0	NA	NA	NA	22L	71°05'	50°50'
468	5-10	U F / 6 4	1 H / 5	7*V / 4	2 H / 1	GR $2+1^{10}$	fR^{9}MU^{1} / j&m	-	5/5	3	NA	PTL	22L	70°35'	50°45'
469	5-10	R H U / 4 3 3	1 A / 5	1 H / 3	1 V / 2	GR $8^{5}2+1^{5}$	FR^{6}fR^{3}FM^{1} / m m&j m	-	10/0	NA	NA	NA	22L	70°40'	50°20'
470	5-10	H R / 6 4	1 V / 5	1 A / 4	1 H / 1	GR $2^{5}8^{3}4^{2}$	fR^{9}FM^{1} / m&r&j j&m	-	10/0	NA	NA	NA	22K	70°00'	51°00'
471	4-10	H M R / 5 3 2	1 V / 5	O / 3	1 A / 2	GR $8^{6}2^{4}$	fR^{9}FM^{1} / m m	-	10/0	NA	NA	NA	22K	69°00'	50°45'
472	3-10	H R / 6 4	1 A / 6	1 V / 4		GR $4^{4}2^{3}$ SU 10^{3}	fR^{9}FM^{1} / m&j m&j	-	8/2	3	NA	HRL	22N	69°00'	51°30'
473	5-10	M / 10	1 V / 6	1 A / 4		SU $10^{6}9^{4}$	fR^{8}FR^{2} / m m	-	10/0	NA	NA	NA	22N	68°35'	51°25'
474	3-10	H R M / 5 3 2	1 V / 6	1 A / 3	O / 1	SU 10^{4} GR $4^{3}3^{3}$	fR^{6}FR^{2}FM^{2} / m m m	-	7/3	3	NA	HRL	22N	68°25'	51°35'
476	5-10	M / 10	1 V / 7	1 A / 3		GR $1^{4}2^{3}4^{3}$	FR^{6}LB^{2}FM^{1}LI^{1} / m m	-	10/0	NA	NA	NA	22O	67°40'	51°25'
477	5-10	R U / 6 4	1 D / 5	1 H / 3	1 A / 2	GR $2+1^{10}$	fR^{6}LB^{1} / r&m	Br^{3}	10/0	NA	NA	NA	22O	66°55'	51°50'
485	4-10	R H / 6 4	1 A / 5	1 H / 3	1 V / 2	GR $1^{5}2^{3}8^{2}$	FR^{6}fR^{4} / m m	-	10/0	NA	NA	NA	22O	66°35'	51°20'
486	4-10	M H / 6 4	1 V / 6	O / 4		GR $2^{5}1^{5}$	FR^{6}fR^{3}KR-DE-LI^{1} / m m	-	10/0	NA	NA	NA	22J	67°20'	50°50'
487	3-8	U / 10	4*P / 5	2 H / 3	1 A / 2	GR $2^{5}1^{5}$	FR^{8}FM^{2} / m r	-	10/0	NA	NA	NA	22O	67°28'	51°00'
130	2-6	M R / 6 4	1 V / 5	O / 4	4*T / 1	GR $2+1^{10}$	FR^{6}LB-DE-LI^{4} / m&j	-	10/0	NA	NA	NA	22O	66°25'	51°38'
507	5-10	H R M / 5 3 2	1 A / 4	1 V / 4	1 H / 2	GR $6^{6}2+1^{4}$	fR^{5}LB-LI-DE^{4} / m	Br^{1}	10/0	NA	NA	NA	22P	65°50'	51°15'
508	5-10	H R / 6 4	1 V / 5	O / 4	1 H / 1	GR $4^{8}2^{2}$	LB^{3}KR-DE-LI^{2}fR^{5} / m	-	10/0	NA	NA	NA	22I	65°20'	51°00'
512	5-10	R / 10	1 V / 7	1 D / 3		GR $4^{8}6^{2}$	fR^{3}LB-LI^{4} / r&m	Br^{3}	10/0	NA	NA	NA	22P	65°10'	51°25'
513	4-10	H R / 6 4	1 V / 5	1 A / 4	1 H / 1	GR $4^{6}6^{4}$	fR^{6}DE-KR-LI^{3} / m	Br^{1}	10/0	NA	NA	NA	22P	64°35'	51°35'
514	4-10	R U H / 5 3 2	1 V / 5	1 D / 3	4*T / 2	GR $6^{4}4^{3}5^{3}$	fR^{6}DE-KR-LI^{3} / m&r	Br^{1}	10/0	NA	NA	NA	12M	63°40'	51°25'
515	4-10	H / 10	1 V / 6	1 A / 4		GR $4^{8}2+1^{2}$	fR^{7}DE-KR-LI^{3} / m&r	-	10/0	NA	NA	NA	12M	63°50'	51°10'
517	4-10	R H / 6 4	1 V / 6	1 A / 4		GR $6^{8}3^{2}$	fR^{6}DE-KR-LI^{4} / m&r	-	10/0	NA	NA	NA	12M	62°50'	51°10'
518	3-8	H / 10	1 A / 6	1 V / 4		GR $6^{6}2+1^{4}$	fR^{5}DE-KR-LI^{5} / m	-	10/0	NA	NA	NA	12M	62°10'	51°20'
519	3-8	R H M / 5 3 2	1 V / 5	1 A / 3	1 H / 2	GR 6^{10}	fR^{9}MU^{1} / m	-	10/0	NA	NA	NA	12N	61°35'	51°45'
520	3-8	H / 10	1 A / 6	1 V / 4		GR $6^{8}2^{2}$	fR^{10} / m	-	10/0	NA	NA	NA	12N	61°15'	51°20'
521	4-8	U R / 6 4	1 H / 5	1 V / 3	7 V / 2	GR $1^{5}6^{3}5^{2}$	fR^{8}MU^{2} / m	-	10/0	NA	NA	NA	12N	60°45'	51°55'
522	2-6	R H / 6 4	1 V / 6	1 A / 3	7 V / 1	GR $1^{7}5^{3}$	fR^{7}MU^{1} / m	Br^{2}	10/0	NA	NA	NA	12O	60°00'	51°50'

MI : Lac Mistassini

439	4–8	R U / 6 4	1 H / 6	1 E / 4		SU $6^{7}7^{3}$	fR^{7} / m	Br^{3}	10/0	NA	NA	NA	32P	72°20'	51°35'
440	4–8	R U / 6 4	1 D / 5	1 A / 3	1 H / 2	SU $6^{8}7^{2}$	fR^{5}MU^{1} / m	Br^{4}	10/0	NA	NA	NA	32P	72°05'	51°40'
441	2–5	U / 10	2 T / 6	4*P / 4		SU $6^{7}7^{3}$	fR^{2}MU^{1} / m	Br^{7}	9/1	NA	2	RFF	32P	72°20'	51°20'
442	2–5	U R / 6 4	1 D / 5	1 A / 3	1 H / 2	GR $6^{7}4^{3}$	fR^{4}MU^{1} / m	Br^{5}	9/1	2	NA	PTL	32P	72°20'	51°15'
443	2–4	U / 10	1 H / 5	7*V / 3	1 D / 2	SU 9^{10}	fR^{7}MU^{3} / m	–	5/5	3	NA	PTL	32P	73°00'	51°10'
444	2–6	R U / 6 4	1 A / 5	1 V / 3	1 H / 2	GR $2^{5}Fe^{3}4^{2}$	fR^{7}MU^{2} / m	Br^{1}	8/2	3	NA	HTL	32I	72°50'	50°55'
445	3–6	H M R / 5 4 1	1 V / 5	1 A / 3	1 D / 2	GR $7^{6}6^{4}$	fR^{10} / m	–	10/0	NA	NA	NA	32P	72°45'	51°05'
446	2–5	R U / 6 4	2 H / 5	2 P / 4	7*N / 1	GR $2^{5}6^{3}$ SU 9^{2}	fR^{6}MU^{1} / m&j	Br^{3}	9/1	NA	3	RFF	32I	73°05'	50°50'
447	2–6	R U / 6 4	1 A / 6	1 D / 4		GR $2+1^{9}6^{1}$	fR^{9}MU^{1} / m	–	9/1	2	NA	HTL	32I	73°15'	50°35'
448	2–5	F / 10	7 S / 6	7 N / 4		GR $2+1^{10}$	MU^{7}LB^{2}fR^{1}	–	10/0	NA	NA	NA	32I	73°05'	50°20'
449	2–6	U / 10	1 H / 5	1 A / 3	7*V / 2	GR $2+1^{10}$	fR^{7}MU^{2} / m	Br^{1}	10/0	NA	NA	NA	32I	72°55'	50°40'
450	5–8	H M R / 5 4 1	1 V / 5	1 A / 3	1 D / 2	GR $2+1^{10}$	fR^{10} / m	–	9/1	2	NA	HRL	32I	72°50'	50°47'
453	5–10	R U H / 6 3 1	1 A / 5	2 H / 3	1 V / 2	GR $2+1^{10}$	fR^{10} / m&r	–	10/0	NA	NA	NA	32I	72°15'	50°50'
460	2–7	H R / 7 3	1 A / 6	1 V / 4		GR $2+1^{10}$	fR^{9} fM^{1} / m&r m&j	–	10/0	NA	NA	NA	32I	72°50'	50°15'
461	2–5	R U H / 5 3 2	1 A / 6	2 H / 3	1 V / 1	GR $2+1^{10}$	fR ^{6}FR^{4} / m&j&r m&j	–	10/0	NA	NA	NA	32I	72°30'	50°15'
764	2–5	U F R / 6 3 1	1 A / 5	1 D / 3	1 H / 2	SU $9^{5}6^{3}7^{2}$	fR^{7}MU^{2} / m&j	Br^{1}	9/1	3	NA	PTL	32P	72°40'	51°20'
947	2–5	U R / 7 3	1 A / 5	7*N / 3	1 H / 2	SU 9^{10}	fR^{7}MU^{3}	–	10/0	NA	NA	NA	32I	73°35'	50°40'
946	2–5	U / 10	7 V / 5	2 H / 3	1 H / 2	SU $6^{4}7^{3}3^{3}$	fR^{6}MU^{3}LB^{1}	–	10/0	NA	NA	NA	32P	73°00'	51°50'
945	2–5	R U / 7 3	1 D / 5	1 H / 3	1 A / 2	SU $7^{5}6^{5}$	fR ^{6}MU^{1} / j&m	Br^{3}	9/1	2	NA	PTL	32P	73°45'	51°40'
929	2–5	R U / 6 4	1 H / 5	1 A / 3	7 V / 2	SU $6^{4}3^{4}7^{2}$	fR^{7}LB^{1}	Br^{2}	9/1	2	NA	HTL	32P	73°50'	51°50'
928	2–5	U R / 6 4	7 H / 5	4*T / 3	1 A / 2	SU $6^{5}3^{5}$	fR^{5}MU^{3}LB^{1}	Br^{1}	9/1	NA	2	PMF	32O	74°05'	51°55'
926	2–5	U R / 7 3	1 H / 5	7 H / 3	1 D / 2	SU $6^{5}3^{5}$	fR^{6}MU^{2}	Br^{2}	8/2	2	NA	PTL	32O	75°20'	52°00'
925	2–5	U F R / 5 3 2	1 A / 5	7 S / 3	4*T / 2	SU $1^{6}6^{4}$	fR^{5}MU^{3}	Br^{2}	9/1	NA	2	HRF	33B	75°40'	52°05'
924	2–5	R H / 6 4	1 A / 5	1 V / 3	1 H / 2	SU $3^{8}6^{2}$	fR^{8}MU^{1}	Br^{1}	8/2	3	2	HTL/HCF	33B	75°15'	52°15'
131	2–5	H R M / 5 3 2	1 V / 5	1 H / 3	0 / 2	SU $3^{8}6^{2}$	fR^{9}LB^{1}	–	9/1	2	NA	HRL	33B	74°05'	52°10'
451	5–10	H M R / 5 4 1	1 V / 5	1 A / 3	1 D / 2	GR $2+1^{10}$	fR^{8} / m	Br^{2}	10/0	NA	NA	NA	22M	71°30'	51°15'
452	5–10	U R / 5 5	1 H / 4	1 A / 3	1 D / 3	GR $2+1^{10}$	fR^{9} / m	Br^{1}	9/1	2	NA	HTL	22L	71°55'	50°55'
454	5–10	U F R / 6 3 1	1 H / 5	1 D / 3	7*V / 2	GR $2+1^{10}$	fR^{6}MU^{1} / m	Br^{3}	9/1	3	NA	HTL	22M	71°15'	51°30'
455	5–10	H R M / 5 3 2	1 A / 5	1 V / 3	1 H / 2	GR 4^{10}	fR^{8} / m	Br^{2}	10/0	NA	NA	NA	22M	70°50'	51°35'
456	5–10	R H / 6 4	1 A / 5	1 H / 3	1 V / 2	GR $4^{4}6^{3}$ SU 9^{3}	fR^{9} / m	Br^{1}	9/1	3	NA	HTL	22M	70°25'	51°45'
457	5–10	U R F / 5 3 2	1 H / 5	7*V / 3	2 H / 2	GR $2+1^{10}$	fR ^{9} / r&j&m	Br^{1}	8/2	3	NA	HTL	22M	70°00'	51°35'

MI : Lac Mistassini

523	2–5	R U / 6 4	1 D / 6	7 V / 4		GR 1^{10}	fR^{6}LB^{1}MU^{3} / m	–	10/0	NA	NA	NA	120	59°35'	51°55'
524	0–2	U / 10	4*T / 7	5 E / 3		GR 1^{10}	fR^{10} / m	–	9/1	NA	2	PMF	120	58°42'	51°35'
525	2–5	R H / 6 4	1 V / 5	1 A / 3	7 V / 2	GR 1^{10}	fR^{7}LB^{1}MU^{2} / m	–	10/0	NA	NA	NA	120	58°50'	51°53'
767	0–3	H U / 6 4	1 A / 6	7 V / 4		GR 1^{10}	fR^{5}MU^{4} / m	Br^{1}	9/1	NA	2	HTF	120	59°00'	51°50'
488	4–10	M H / 6 4	1 V / 5	O / 5		GR $8^{6}4^{2}6^{2}$	fR^{7}LI-DE-KR^{3} / m	–	10/0	NA	NA	NA	22K	68°10'	51°00'
501	5–10	H / 10	1 V / 6	O / 4		GR 2^{10}	fR^{7}LI-DE-KR^{3} / m	–	10/0	NA	NA	NA	22J	67°12'	50°45'

ML : Mid Laurentians (Mauricie)

48	2–6	H M R / 5 4 1	1 V / 6	1 A / 4		GR $8^{6}4^{2}1^{2}$	FM^{5}FF^{4}FR^{1} / m&j m&j j&m	–	10/0	NA	NA	NA	31I	73°20'	46°40'
49	2–6	H R U / 5 3 2	1 A / 5	1 V / 3	1 H / 2	GR $8^{4}1^{4}6^{2}$	FF^{4}FM^{3}FR^{2} / m m&r j&m	Ct^{1}	10/0	NA	NA	NA	31J	74°20'	46°35'
50	2–5	H R / 6 4	1 V / 6	1 A / 4		GR $8^{6}2^{2}4^{2}$	FF^{8}FM^{2} / j&m m	–	10/0	NA	NA	NA	31J	75°15'	46°15'
51	1–5	M H / 6 4	1 V / 6	1 A / 3	4*T / 1	GR $1^{5}8^{3}2^{2}$	FF^{7}FM^{2}FR^{1} / m j&m j	–	10/0	NA	NA	HRM	21L	71°25'	46°55'
52	0–1	M / 10	1 V / 5	1 A / 3	O / 2	GR $1^{6}2^{4}$	FM^{10} / j	–	10/0	NA	NA	HRM	21M	70°40'	47°05'
53	0–3	U H R / 5 3 2	3 T / 5	5 E / 3	1 A / 2	GR $1^{4}8^{3}4^{3}$	FM^{4} / j	C^{6}	10/0	NA	NA	HRM	21M	70°35'	47°25'
54	0–2	H R U / 5 3 2	1 A / 5	1 V / 3	1 H / 2	GR $8^{8}2^{2}$	FM^{4} / j	C^{6}	10/0	NA	NA	HRM	21M	70°15'	47°25'
55	0–2	H R / 6 4	1 V / 6	1 A / 4		GR $8^{6}2^{4}$	FM^{4} / j	C^{6}	10/0	NA	NA	HRM	21M	70°10'	47°35'

MN : Lac Mistastin

768	2–7	R / 10	1 V / 5	1 A / 3	O / 2	CH $5^{7}3^{3}$	LB^{5}LI^{3}DE^{2} / –	–	9/1	3	NA	HRL	230	67°45'	55°45'
769	2–7	R / 10	1 V / 6	O / 4		CH $5^{5}4^{3}3^{2}$	LI^{4}DE^{3}LB^{3} / –	–	9/1	2	NA	HRL	230	66°50'	55°30'
766	2–8	R U / 6 4	1 V / 4	1 D / 3	7 V / 3	CH $3^{6}Fe^{2}5^{2}$	LB^{6}LI^{2}MU^{2} / –	–	9/1	3	NA	HRL	230	67°30'	55°25'
772	4–10	R / 10	1 V / 4	O / 3	1 D / 3	CH $4^{6}5^{4}$	LI^{3}DE^{3}LB^{3}MU^{1} / –	–	10/0	NA	NA	NA	230	66°20'	55°25'
797	5–10	F U / 6 4	2 T / 5	1 V / 3	1 D / 2	CH Fe^{10}	LB^{9}LI^{1} / –	–	10/0	NA	NA	NA	230	67°25'	55°03'

MO : Mid Outaouais

23	2–5	H / 10	1 A / 5	1 V / 5		GR $1^{5}2^{3}6^{2}$	FF^{6}FM^{3}FM^{1} / m j m	–	10/0	NA	NA	NA	31F	76°30'	45°55'
24	2–5	R U H / 5 3 2	1 A / 4	1 V / 4	1 H / 2	GR $2^{5}1^{5}$	FF^{5}FM^{3}FF^{1}FR^{1} / m m&j j j&m	–	10/0	NA	NA	NA	31K	76°30'	46°05'

MOm : Southern Mid Outaouais

37	1–5	H R U / 5 4 1	1 V / 7	1 A / 3		GR $1^{6}2^{3}6^{1}$	FF^{4}FM^{3}FR^{3} / m j&m j&r	–	10/0	NA	NA	NA	31K	77°30'	46°15'
38	2–5	R U / 6 4	1 A / 5	1 V / 3	1 H / 2	GR $1^{7}2^{3}$	FM^{4}FF^{3}FR^{3} / m&r r&m m	–	9/1	3	NA	HTL	31K	77°10'	46°20'
39	2–5	R H U / 5 3 2	1 A / 5	1 V / 5		GR $1^{8}2^{2}$	FM^{8}FF^{1}FR^{1} / m&j m j	–	10/0	NA	NA	NA	31K	76°35'	46°20'

MOs : Northern Mid Outaouais

40	0–6	M R / 7 3	1 A / 6	1 V / 3	2 T / 1	GR $6^{5}1^{3}2^{2}$	FF^{6}FM^{3}FR^{1} / m m j	–	10/0	NA	NA	NA	31L	78°10'	46°25'
41	2–5	H R / 6 4	1 V / 6	1 A / 4		GR $1^{7}2^{3}$	FM^{5}FF^{3}FR^{2} / m&r m j&m	–	10/0	NA	NA	NA	31K	77°15'	46°30'
42	2–5	R U H / 5 3 2	1 A / 4	1 V / 3	1 H / 3	GR $6^{6}2^{2}1^{2}$	FM^{7}FF^{2}FR^{1} / m m j&r	–	9/1	3	NA	HTL	31J	75°40'	46°50'
43	2–5	H R M / 5 3 2	1 A / 5	1 V / 5		GR $2^{4}8^{3}1^{3}$	FF^{7}FM^{2} / m m	C^{1}	10/0	NA	NA	NA	31J	75°30'	46°45'
44	2–6	H R / 6 4	1 V / 5	1 A / 4	1 H / 1	GR $6^{5}2^{3}1^{2}$	FF^{7}FM^{1}FR^{1} / m m m	C^{1}	10/0	NA	NA	NA	31J	75°00'	46°45'

MR : Montreal Island and Upper Richelieu

1	0-1	U R / 6 4	5 P / 5	5*T / 3	5 E / 2	SL $1^5 2^3 3^2$	FF^1 / j	$C^6 Vi^3$	6/4	NA	3	PMF	31H	74°00'	45°20'
2	1-2	R / 10	1 A / 6	5*T / 2	6 T / 2	SL $1^5 6^5$	FF^6 / j	C^4	10/0	NA	NA	NA	31G	74°20'	45°25'
3	1-2	U F R / 5 3 2	5 P / 4	5*T / 3	1 A / 3	SL 3^{10}	FF^2 / m	C^8	10/0	NA	NA	NA	31H	73°15'	45°05'

MS : Saguenay Hills

132	1-5	M H R / 5 3 2	1 V / 5	O / 4	2 H / 1	GR $8^7 5^3$	FM^7 FM^2 FF^1 / j&r j&m j&r	-	10/0	NA	NA	NA	22D	70°15'	48°10'
133	2-5	H M / 5 5	1 V / 6	1 A / 4		GR $5^8 8^2$	FR^8 FM^2 / m&j j	-	10/0	NA	NA	NA	22D	70°15'	48°20'
134	2-5	M / 10	1 V / 5	1 A / 4	2 T / 1	GR $5^7 1^3$	FR^7 FM^2 FF^1 / m j j	-	10/0	NA	NA	NA	22D	70°20'	48°27'

MT : Lac Matagami

235	2-5	U R / 6 4	4 P / 5	4 E / 3	7 V / 2	SU $7^5 1^3 3^2$	FR^2 fR^2 FF^2 FM^1 / j&r&m m&j j&r j&r	$C^2 Ct^1$	9/1	3	NA	PML	32D	79°00'	48°55'
236	2-5	R U H / 5 3 2	4 A / 5	O / 3	4 P / 2	SU 7^{10}	FR^4 FM^3 fR^1 LB^2 / j&r j&r m	-	10/0	NA	NA	NA	32E	79°20'	49°10'
237	2-5	H R / 6 4	4*A / 5	1 V / 3	O / 2	SU 7^{10}	fR^8 FR^2 / j&r j&r	-	10/0	NA	NA	NA	32E	79°00'	49°15'
238	2-5	U R / 7 3	2 R / 5	2 H / 3	4 P / 2	SU $7^7 1^3$	fR^8 / j&m	Ct^2	10/0	NA	NA	NA	32E	78°40'	49°10'
239	2-5	U R / 7 3	2 R / 5	2 H / 3	4 P / 2	SU $7^5 1^3 3^2$	FR^3 FM^3 fR^2 / m j m	Ct^2	10/0	NA	NA	NA	32E	78°05'	49°15'
240	2-5	R / 10	2 R / 5	2 H / 3	4 P / 2	SU 7^{10}	FR^3 FM^3 fR^1 / m j m	Ct^3	10/0	NA	NA	NA	32C	77°55'	48°55'
241	2-5	R / 10	2 R / 5	2 H / 4	4 P / 1	SU $7^4 1^3 3^3$	FR^4 FM^2 FF^2 MU^1 / j r&j j&r	C^1	10/0	NA	NA	NA	32C	77°50'	48°30'
242	2-5	R H U / 5 3 2	4*A / 5	4 A / 3	O / 2	SU $1^7 7^3$	fR^4 FR^3 FM^2 / m&j m m	Ct^1	10/0	NA	NA	NA	32E	78°25'	49°10'
243	2-5	U R / 7 3	2 H / 4	2 R / 3	4 P / 3	SU $7^4 1^3 3^3$	FR^4 FF^2 / m&j&r j	C^4	10/0	NA	NA	NA	32D	78°25'	48°50'
246	2-5	U F R / 4 4 2	4 P / 4	4 E / 3	7 V / 3	SU $7^4 1^3 3^3$	FR^3 fR^2 FF^1 FM^1 / j&r j&r r&j r&j	$C^1 Ct^2$	10/0	NA	NA	NA	32C	77°30'	48°55'
247	2-5	R U / 6 4	4*A / 5	4 P / 3	7 V / 2	SU $1^4 7^3 3^3$	fR^5 MU^1 FR^1 FM^3 / m&j m&j m&j	-	9/1	3	NA	PML	32F	76°20'	49°20'
277	2-5	F U / 6 4	7 V / 5	7 N / 3	1 P / 2	SU 6^{10}	MU^5 LB^3 fR^2 / m&j	-	10/0	NA	NA	NA	32L	79°20'	50°15'
278	2-5	U / 10	1 P / 5	7 V / 3	7 N / 2	SU $1^6 3^2 7^2$	fR^4 LB^3 MU^2 / m	Br^1	10/0	NA	NA	NA	32E	79°00'	50°00'
279	2-5	R U / 6 4	2 H / 6	7 V / 3	1 P / 1	SU $1^5 3^3 5^2$	fR^7 LB^2 MU^1 / m&r	-	10/0	NA	NA	NA	32L	78°45'	50°05'
281	2-5	F U / 6 4	7 N / 5	7 V / 3	1 P / 2	SU $6^5 1^5$	MU^7 fR^2 LB^1 / m	-	9/1	3	NA	PML	32L	78°10'	50°00'
282	2-5	U F / 7 3	4 P / 6	7 V / 4		SU 7^{10}	FR^5 fR^4 MU^1 / j&m m&j	-	10/0	NA	NA	NA	32E	78°50'	49°20'
286	2-5	H / 10	1 V / 6	O / 4		SU 1^{10}	FR^5 LB^4 MU^1 / j	-	10/0	NA	NA	NA	32E	78°20'	49°32'
289	2-5	U R / 7 3	4 P / 6	7 V / 3	7 N / 1	SU $7^5 1^3 6^2$	FR^3 fR^3 MU^1 FM^2 / j&m m&j j	Ct^1	9/1	3	NA	PML	32F	77°30'	49°45'
290	2-5	R / 10	4 A / 5	4 V / 4	4*A / 1	SU $5^5 7^5$	fR^4 FR^3 FM^3 / j&m j&r	-	9/1	3	NA	PML	32F	77°10'	49°55'
291	2-5	R H U / 5 3 2	4*A / 5	4 P / 4	1 V / 1	SU $7^5 5^3 3^2$	fR^4 FR^3 FM^3 / m&j j&r m	-	10/0	NA	NA	NA	32F	77°00'	49°40'
292	2-5	R U H / 5 4 1	4 P / 6	4*A / 3	7 V / 1	SU $7^4 6^3 3^3$	fR^9 LB^1 / m&j	-	10/0	NA	NA	NA	32F	76°20'	49°55'
643	2-5	F U / 6 4	7 N / 5	4 P / 3	7 V / 2	SU $6^5 1^5$	MU^5 fR^3 FR^2 / m m	-	9/1	3	NA	PML	32E	78°10'	49°50'
644	2-5	U R / 6 4	2 R / 5	2 H / 3	4 P / 2	SU 3^{10}	MU^5 fR^5 / m	-	10/0	NA	NA	NA	32E	78°20'	49°40'
645	2-5	F U / 6 4	7 N / 5	4 P / 3	7 V / 2	SU $1^6 3^4$	MU^5 fR^3 FR^2 / m j&m	-	10/0	NA	NA	NA	32E	78°30'	49°40'

MT : Lac Matagami

646	2-5	F U / 6 4	1 P / 5	7 N / 3	7 V / 2	SU $1^{5}3^{3}7^{2}$	MU $^{6}\frac{FR}{m}{}^{4}$	-	10/0	NA	NA	NA	32E	79°00'	49°35'
938	2-5	F U / 6 4	4 P / 5	7 V / 3	7 N / 2	SU $1^{6}7^{4}$	$\frac{FR}{m}{}^{5}MU^{3}LB^{2}$	-	10/0	NA	NA	NA	32E	79°20'	49°25'

MU : Lac Musquaro

785	0-1	F U R / 5 3 2	7 N / 4	6 T / 4	O / 2	GR $1^{6}6^{2}3^{2}$	$MU^{7}DE\text{-}LB\text{-}LI^{3}$	-	10/0	NA	NA	PSM	12K	61°50'	50°13'
786	0-2	R / 10	1 V / 5	O / 5		GR $1^{7}2^{2}8^{1}$	$DE\text{-}LI\text{-}LB^{10}$	-	8/2	3	NA	HRL	12J	60°00'	50°25'
787	1-2	R H / 6 4	O / 4	1 V / 3	6 V / 3	GR 1^{10}	$MU^{7}fR^{3}$	-	8/2	3	NA	HRL	12K	61°05'	50°30'
788	0-1	U R / 6 4	7 V / 6	O / 4		GR $8^{7}2^{3}$	$MU^{9}\frac{fR}{m}{}^{1}$	-	10/0	NA	NA	NA	12J	59°30'	50°40'
762	1-5	H M / 5 5	1 V / 6	O / 4		GR $2+1^{10}$	$\frac{fR}{m}{}^{7}MU^{3}$	-	10/0	NA	NA	NA	12K	61°45'	50°40'

NA : Nastapoka Islands

833(1)	0-1	U R / 9 1	O P / 7	6 V / 1	7*V / 2	SU 9^{10}	$DE^{6}MU^{2}LI^{2}$	-	10/0	NA	NA	PRM/HRM	34F	76°45'	57°15'
834(1)	0-5	M H / 7 3	O H / 8	6 V / 2		SU $6^{9}8^{1}$	$DE^{8}MU^{1}LI^{1}$	-	10/0	NA	NA	PRM	34F	76°45'	57°35'
835(1)	0-2	U R / 6 4	6 V / 7	O H / 3		SU $6^{6}7^{4}$	$DE^{5}LI^{4}MU^{1}$	-	10/0	NA	NA	PRM	34F	76°30'	57°05'
836	0-2	R U / 9 1	O H / 7	6 V / 2	7 V / 1	SU $6^{6}8^{4}$	$DE^{6}LI^{3}MU^{1}$	-	6/4	2	NA	PRL	34K	76°45'	58°05'
837	1-2	U R / 7 3	7 V / 5	5 E / 3	O H / 2	SU 6^{10}	$MU^{4}DE^{3}A^{2}LI^{1}$	-	8/2	2	NA	PML	34K	76°30'	58°30'

NC : Lac Nedlouc

858	2-4	U R / 7 3	O H / 6	1 V / 3	1 A / 1	SU $6^{6}8^{2}7^{2}$	$DE^{6}LI^{4}$	-	9/1	2	NA	PRL	34H	72°30'	57°30'
859	2-3	U R / 7 3	1 D / 5	1 H / 4	1 V / 1	SU $6^{8}8^{2}$	$LI^{7}DE^{3}$	-	9/1	2	NA	PTL	24L	70°45'	58°05'
860	1-3	U / 10	1 H / 5	1 V / 3	O H / 2	SU $6^{6}8^{2}3^{2}$	$LI^{5}DE^{3}A^{2}$	-	8/2	2	NA	PTL	24E	71°30'	57°59'

NDi : Lower and Mid Notre-Dame Hills

165	2-7	R H / 6 4	1 V / 5	1 A / 4	1 H / 1	AP 5^{10}	$\frac{FR}{j}{}^{7}\frac{FM}{m}{}^{2}$	Ct^{1}	10/0	NA	NA	NA	22B	67°55'	48°05'
166	1-5	M / 10	1 V / 6	O / 4		AP 5^{10}	$\frac{FR}{j}{}^{5}\frac{FM}{j}{}^{4}\frac{FF}{j}{}^{1}$	-	10/0	NA	NA	NA	22B	67°40'	48°05'
167	2-5	R U H / 5 3 2	1 V / 6	1 A / 4		AP $1^{5}5^{5}$	$\frac{FM}{j}{}^{6}\frac{FF}{j}{}^{1}\frac{FR}{j}{}^{1}$	C^{2}	10/0	NA	NA	NA	22B	67°55'	48°25'
168	1-5	R U H / 5 3 2	1 A / 5	1 V / 3	1 H / 2	AP 5^{10}	$\frac{FM}{j}{}^{4}\frac{FF}{j}{}^{2}\frac{FR}{j}{}^{2}$	C^{2}	9/1	NA	2	HRF	22B	67°30'	48°20'
169	2-7	R U H / 4 4 2	1 H / 7	1 V / 3		AP 5^{10}	$\frac{FR}{j\&m}{}^{9}$	Ct^{1}	10/0	NA	NA	NA	22B	67°00'	48°30'
170	1-7	M R / 7 3	1 V / 6	1 A / 2	1 H / 2	AP $5^{9}6^{1}$	$\frac{FR}{j}{}^{6}\frac{FM}{j\&r\&m}{}^{2}\frac{FF}{j}{}^{1}$	Ct^{1}	10/0	NA	NA	NA	22A	65°25'	48°25'
172	0-2	R U / 5 5	1 A / 7	4*T / 3		AP 5^{10}	$\frac{FM}{j\&r}{}^{8}\frac{FR}{j}{}^{2}$	-	10/0	NA	NA	NA	22A	64°40'	48°50'
173	0-5	M H / 6 4	1 V / 6	O / 4		AP $1^{7}5^{3}$	$\frac{FM}{r\&j}{}^{5}\frac{FR}{j\&m}{}^{4}$	Ct^{1}	10/0	NA	NA	HRM	22H	64°50'	49°05'
174	1-5	H M / 6 4	1 V / 6	1 A / 3	4*T / 1	AP $1^{8}5^{2}$	$\frac{FR}{j\&m}{}^{6}\frac{FM}{j}{}^{2}\frac{FF}{j}{}^{1}$	Ct^{1}	10/0	NA	NA	NA	22H	65°25'	49°05'
175	0-6	M H R / 4 4 2	1 V / 5	O / 4	4*T / 1	AP 1^{10}	$\frac{FM}{j\&r}{}^{5}\frac{FR}{j\&m}{}^{4}\frac{FF}{r}{}^{1}$	-	10/0	NA	NA	NA	22G	66°30'	49°00'
176	2-6	R H / 5 5	1 V / 5	O / 4	1 H / 1	AP 1^{10}	$\frac{FM}{j\&r}{}^{5}\frac{FR}{j}{}^{5}$	-	10/0	NA	NA	NA	22B	67°05'	48°50'

NDs : Notre-Dame Uplands

268	2-10	H R / 5 5	1 A / 6	1 V / 4		AP $5^{7}1^{3}$	$\frac{FR}{j\&m\&r}{}^{8}\frac{FM}{r\&j}{}^{2}$	-	10/0	NA	NA	NA	22A	65°37'	48°53'
939	2-10	M H / 6 4	1 V / 6	O / 4		AP 5^{10}	$\frac{FR}{j\&m}{}^{7}\frac{FM}{j\&r}{}^{1}\frac{FF}{r}{}^{1}$	Ct^{1}	10/0	NA	NA	NA	22A	65°20'	48°45'
269	2-10	H / 10	O / 6	1 V / 4		AP 6^{10}	$\frac{FR}{r}{}^{10}$	-	10/0	NA	NA	NA	22B	66°15'	48°47'

(1) Iles de cuestas et cuestas

NE : Rivière Némiscachingue

185	5–10	M/10	1 V/7	1 A/3		GR $8^{4}3^{3}1^{3}$	FR^{7}FM^{3} / mδj m	–	10/0	NA	NA	NA	31O	75°00'	48°00'
186	5–10	M/10	1 V/7	1 A/3		GR $6^{5}8^{5}$	FM^{6}FR^{2}FF^{2} / m j j	–	10/0	NA	NA	NA	31O	75°10'	47°45'

NI : Lac Nichicun

603	2–5	R/10	1 H/5	1 A/3	1 D/2	SU $6^{5}7^{5}$	fR^{5}LB^{5}	–	9/1	2	NA	HTL	33H	73°53'	53°50'
604	2–5	H R/6 4	1 V/5	1 H/3	1 A/2	SU $6^{5}7^{5}$	fR^{6}LB^{3}	Br^{1}	9/1	3	2	HRL/HRF	33H	73°40'	53°50'
605	2–5	M H/6 4	1 V/5	1 A/3	O/2	SU $6^{6}7^{4}$	fR^{7}LB^{3}	–	10/0	NA	NA	NA	33H	73°25'	53°50'
606	2–5	H M/7 3	1 V/5	1 A/3	1 H/2	SU $6^{8}3^{2}$	fR^{8}LB^{2}	–	9/1	NA	2	HRF	33G	74°10'	53°40'
607	2–5	R/10	1 H/5	1 A/3	1 D/2	SU $6^{5}3^{5}$	fR^{7}LB^{2}	Br^{1}	8/2	2	NA	HTL	33H	73°50'	53°50'
608	2–8	R H/7 3	1 D/5	1 V/3	1 A/2	SU $6^{7}3^{3}$	fR^{6}LB^{3}	Br^{1}	9/1	2	NA	HTL	33H	72°55'	53°55'
609	2–8	U/10	1 D/5	1 H/4	2 R/1	SU 6^{10}	fR^{6}LB^{2}MU^{2}	–	9/1	2	NA	HTL	33H	72°05'	53°55'
610	2–5	R/10	1 D/5	1 V/3	1 H/2	SU 6^{10}	fR^{6}MU^{2}LB^{2} / c	–	8/2	2	NA	HTL	33H	73°00'	53°40'
611	2–8	R/10	1 H/6	1 D/4		SU $6^{6}3^{4}$	fR^{6}LB^{2}	Br^{2}	7/3	3	NA	HTL	33H	72°30'	53°15'
612	2–8	R/10	1 D/6	1 H/3	7 V/1	SU $6^{4}3^{4}1^{2}$	fR^{6}LB^{3}	Br^{1}	9/1	2	NA	PTL	33H	72°55'	53°15'
614	2–6	R H/6 4	1 V/5	1 A/3	1 H/2	SU 3^{10}	fR^{6}LB^{4}	–	9/1	2	NA	HTL	33G	74°25'	53°15'
615	2–5	R/10	1 H/5	1 V/4	1 A/1	SU $6^{6}1^{4}$	fR^{7}LB^{3}	–	9/1	2	NA	HTL	33G	74°40'	53°25'
616	2–5	U R/6 4	2 T/5	2 H/3	1 H/2	SU 3^{10}	fR^{7}LB^{3}	–	9/1	NA	2	PTF	33G	74°40'	53°20'
617	2–6	R H/7 3	1 V/5	1 A/3	1 H/2	SU 3^{10}	fR^{6}LB^{4}	–	9/1	2	NA	HTL	33H	73°20'	53°00'
618	2–5	R H/6 4	1 V/5	1 A/3	1 H/2	SU 3^{10}	fR^{7}LB^{3}	–	8/2	2	NA	HTL	33G	74°45'	53°05'
619	2–5	U F/6 4	7 N/6	2 T/4		SU 3^{10}	fR^{5}LB^{3}MU^{2}	–	10/0	NA	NA	NA	33G	75°22'	53°17'
620	2–6	H R M/5 3 2	1 V/5	O/3	1 A/2	SU 3^{10}	fR^{4}LB^{4}	Br^{2}	8/2	2	NA	HRL	33B	74°50'	52°40'
621	2–7	H R U/5 4 1	1 V/5	1 H/3	1 A/2	SU 3^{10}	fR^{6}LB^{2}	Br^{2}	8/2	2	NA	HTL	33A	73°30'	52°30'
622	2–5	U R H/5 4 1	1 H/5	7 V/3	1 D/2	SU 3^{10}	fR^{7}LB^{2}MU^{1}	–	7/3	3	NA	HTL	33A	73°45'	52°45'
623	2–6	U R/6 4	1 H/5	1 A/3	1 V/2	SU 3^{10}	fR^{5}LB^{3}MU^{1}	Br^{1}	8/2	2	NA	PTL	33A	73°25'	52°20'
624	2–6	U R H/5 4 1	1 A/5	1 V/3	1 H/2	SU $3^{7}6^{3}$	fR^{6}LB^{3}	Br^{1}	8/2	2	NA	PTL	33A	73°10'	52°15'
625	2–5	U R/7 3	2 P/5	4*P/3	1 A/2	SU $6^{6}3^{4}$	fR^{6}LB^{2}MU^{1}	Br^{1}	9/1	NA	3	PTF	33A	73°00'	52°10'
626	2–6	R U/6 4	1 H/5	1 A/3	1 D/2	SU 3^{10}	fR^{7}LB^{3}	–	8/2	2	NA	HTL	33A	72°55'	52°05'
627	2–8	U R/7 3	1 H/5	1 D/3	1 A/2	SU $3^{5}6^{3}1^{2}$	fR^{5}LB^{3}	Br^{2}	8/2	2	NA	PTL	33A	72°35'	52°20'
628	2–8	U/10	1 H/6	1 A/3	1 D/1	SU 3^{10}	fR^{4}LB^{3}MU^{1}	Br^{2}	8/2	2	NA	PTL	33A	72°30'	52°35'
629	2–8	R U/6 4	1 H/5	1 A/3	1 D/2	SU 3^{10}	fR^{5}LB^{2}MU^{1}	Br^{2}	9/1	2	NA	HTL	33A	72°35'	52°40'
630	2–8	U/10	1 H/5	1 D/3	7 N/2	SU $1^{6}2^{4}$	fR^{5}MU^{4}	Br^{1}	9/1	2	NA	HTL	23D	71°55'	52°25'
631	2–8	R/10	1 H/6	1 D/3	2 H/1	SU 6^{10}	fR^{6}LB^{4}	–	8/2	2	NA	HTL	23E	71°55'	53°45'
632	5–10	R U H/6 3 1	1 H/6	1 D/3	1 V/1	SU $6^{4}7^{4}3^{2}$	fR^{7}LB^{3}	–	8/2	2	NA	HTL	23E	71°15'	53°20'
633	5–10	R/10	1 H/5	1 A/3	1 D/2	SU $7^{5}8^{5}$	fR^{7}LB^{3}	–	8/2	2	NA	HTL	23E	70°35'	53°10'

NI : Lac Nichicun

634	5-10	H/5 M/3 R/2	1 V/5	1 A/3	1 H/2	SU 3^{10}	fR^{7}LB^{3}	–	9/1	2	NA	HTL	23D	71°55'	52°50'
635	5-10	U/7 R/3	1 D/5	1 H/3	1 A/2	SU $3^{6}6^{3}1^{1}$	fR^{6}LB^{2}MU^{1}	Br^{1}	8/2	2	NA	HTL	23D	71°30'	52°40'
636	5-10	U/10	1 H/6	1 A/3	1 D/1	SU $6^{4}7^{4}8^{2}$	fR^{6}LB^{4}	–	7/3	3	NA	HTL	23D	70°40'	52°50'
637	5-10	M/5 H/3 R/2	1 V/5	1 A/3	1 H/2	SU 7^{10}	fR^{8}LB^{2}	–	8/2	2	NA	HTL	23E	70°40'	53°45'
638	5-10	R/5 U/3 M/2	1 H/5	1 A/3	1 V/2	SU $8^{4}6^{3}7^{3}$	fR^{6}LB^{3}	Br^{1}	8/2	2	NA	HTL	23E	70°00'	53°40'
639	5-10	M/10	1 V/6	1 A/4		SU 7^{10}	fR^{5}LB^{2}fM^{1}	Br^{2}	9/1	2	NA	HTL	23F	69°40'	53°40'
640	5-10	U/7 R/3	1 H/7	1 A/3		SU $6^{7}7^{3}$	fR^{6}LB^{3}	Br^{1}	9/1	2	NA	HTL	23F	69°50'	53°30'
641	5-10	U/10	2 H/5	1 H/3	1 A/2	SU 7^{10}	fR^{8}LB^{2}	–	10/0	NA	NA	NA	23D	71°40'	52°20'
930	2-5	R/10	1 V/6	1 A/4		SU $3^{6}1^{4}$	fR^{5}LB^{5}	–	9/1	2	NA	HRL	33G	75°05'	53°25'

NO : Noranda

976	2-5	H/6 R/4	1 V/6	1 A/4		SU $3^{5}1^{3}7^{2}$	FM^{4}/j&m FF^{4}/j&r FR^{1}/j	C^{1}	10/0	NA	NA	NA	32D	79°20'	48°20'

OP : Lac Opiscotéo

918	5-10	R/10	1 H/6	1 A/4		SU 8^{10}	LB^{6}fR^{2}LI^{2}	–	8/2	2	NA	HTL	23C	69°45'	52°40'
919	5-10	M/5 H/3 R/2	1 V/5	1 A/3	1 H/2	SU 8^{10}	LB^{7}fR^{2}LI^{1}	–	8/2	3	NA	HRL	23F	69°00'	53°10'
920	5-10	U/7 R/3	1 H/7	1 A/3		SU 7^{10}	LB^{8}fR^{2}	–	8/2	2	NA	HTL	23F	69°30'	53°20'
921	5-10	H/6 U/4	1 V/5	1 H/3	1 A/2	SU 7^{10}	LB^{7}fR^{2}LI^{1}	–	9/1	2	NA	HTL	23F	69°10'	53°30'
923	5-10	U/7 R/3	1 H/6	1 A/3	7*V/1	SU 7^{10}	LB^{6}MU^{2}fR^{2}	–	9/1	2	NA	PTL	23F	68°55'	53°25'

OT : Otiche Hills

775	4-9	M/6 H/4	1 V/6	1 A/4		SU $7^{5}3^{3}6^{2}$	LB^{3}fR^{3}LI^{2}fM^{1}	Br^{1}	10/0	NA	NA	NA	32P	72°50'	51°45'
776	5-10	H/7 R/3	1 A/5	1 V/3	1 H/2	SU $7^{5}9^{5}$	LB^{5}fR^{2}fM^{2}LI^{1}	–	9/1	2	NA	HTL	23D	71°30'	52°15'
777	5-15	M/5 H/3 R/2	1 V/5	1 A/3	O/2	SU $9^{7}7^{3}$	LI^{7}fM^{2}fR^{1}	–	9/1	2	NA	HRL	23D	70°30'	52°25'
778	7-11	M/5 H/3 R/2	1 V/5	1 A/3	O/2	SU 9^{10}	LI^{7}fM^{2}fR^{1}	–	10/0	NA	NA	NA	23D	71°00'	52°04'
936	5-10	M/10	1 V/5	8 L/3	O/2	SU $7^{8}1^{2}$	fR^{4}LB^{3}fM^{2}	Br^{1}	10/0	NA	NA	NA	33A	72°10'	52°10'

OU : Lower Gatineau and Ottawa River

6	1-3	H/6 R/4	1 A/6	1 V/4		SL 1^{10}	FF^{5}/m	C^{5}	10/0	NA	NA	NA	31H	73°35'	45°05'
7	0-3	U/6 R/4	5 P/6	4*T/2	5*T/2	GR $2^{5}1^{3}6^{2}$	FF^{2}/j FM^{2}/j	C^{6}	9/1	NA	2	PMF	31G	75°50'	45°25'
8	1-4	H/4 R/3 U/3	1 A/5	5EP/3	5*T/2	GR $2^{5}6^{5}$	FF^{5}/j FF^{1}/m FM^{1}/j	C^{3}	10/0	NA	NA	NA	31G	75°55'	45°35'
9	1-5	U/4 R/4 H/2	1 V/5	1 A/3	2 T/2	GR 2^{10}	FM^{7}/j FF^{1}/j&m FR^{1}/m	C^{1}	9/1	3	3	HTL/HTF	31J	75°55'	46°05'

PL : Saint-Laurent Plain and Mid Richelieu

4	0-1	R/6 U/4	1 A/5	5 E/5		SL 1^{10}	FF^{6}/m	C^{4}	10/0	NA	NA	NA	31H	73°40'	45°05'
5	0-1	U/7 F/2 R/1	5 P/5	5 E/3	5*T/2	SL $3^{4}2^{4}4^{2}$	FF^{2}	C^{8}	10/0	NA	NA	NA	31H	73°20'	45°30'

PO : Povungnituk

817	0-1	U/10	O/6 H/6	1 R/3	7 V/1	SU 6^{10}	DE^{6}LI^{2}MU^{1}A^{1}	–	8/2	2	NA	PRL/PRM	35C	77°20'	60°05'
818	0-1	R/7 U/3	O/7 H/2	7 V/2	1 H/1	SU $6^{8}8^{2}$	DE^{6}LI^{2}MU^{1}A^{1}	–	8/2	2	NA	PRL	35C	76°40'	60°05'

PO : Povungnituk e)

819	0-1	U/8 R/2	O/5 H	1/3 R	7/2 V	SU 6^{10}	$DE^{6}LI^{3}MU^{1}$	-	6/4	2	NA	PRL/PTL	34N	76°45'	59°40'
820	0-1	U/8 F/2	7/6 V	O/2 H	5/2 E	SU 6^{10}	$MU^{6}A^{2}DE^{2}$	-	9/1	2	NA	PTL	34N	76°45'	59°20'
821	0-1	U/10	O/5 H	1/4 R	7/1 V	SU $6^{8}8^{2}$	$DE^{4}LI^{3}MU^{2}A^{1}$	-	7/3	2	NA	PRL/PTL	34N	76°50'	59°10'
823	0-1	U/10	O/5 H	1/4 R	7/1 V	SU $6^{5}8^{5}$	$DE^{4}LI^{3}MU^{2}A^{1}$	-	6/4	2	NA	PRL/PTL	34K	77°05'	58°45'
824	0-1	U/7 R/3	O/7 H	7/2 V	6/1 V	SU $6^{6}8^{4}$	$DE^{6}LI^{2}MU^{1}A^{1}$	-	6/4	2	NA	PRL	34K	77°45'	58°45'
825	0-1	U/9 R/1	O/9 H	6/1 V		SU $6^{8}8^{2}$	$DE^{8}LI^{1}MU^{1}$	-	8/2	2	NA	PRL/PRM	34L	78°30'	58°50'
826(1)	0-1	U/9 H/1	O/6 P	6/3 V	O/1 R	SU 6^{10}	$DE^{9}MU^{1}$	-	10/0	NA	NA	HRM/PRM	34L	78°10'	58°25'

RE : Rivière Restigouche

75	0-3	M/6 H/4	1/5 V	6/3 T	O/2	AP $5^{8}8^{2}$	$FF^{3}_{j}FM^{3}_{j}FM^{3}_{m}$	C^{1}	9/1	NA	1	PMF/HRM	22B	66°40'	48°05'

RO : Rivière Roggan

714	0-1	U/10	6/5 T	6/3 V	O/2	SU 6^{10}	$LB^{6}LI^{2}H^{2}$	-	10/0	NA	NA	PRM	33L	79°20'	54°10'
715	0-1	U/10	1/6 D	7*/3 V	6/1 T	SU $6^{6}7^{4}$	$LB^{8}LI^{1}MU^{1}$	-	7/3	2	NA	PTL	33L	79°10'	54°30'
716	0-2	H/7 R/3	O/6	6/3 T	6/1 V	SU 7^{10}	$LB^{6}LI^{4}$	-	7/3	2	NA	HRL	33L	78°55'	54°50'
717	0-2	R/7 U/3	6/5 T	O/3	6/2 V	SU $7^{7}6^{3}$	$LB^{5}LI^{3}MU^{2}$	-	10/0	NA	NA	PRM	33L	78°30'	54°58'

RU : Rupert Bay

526	0-1	U/7 F/3	7*/5 V	6/3 P	5/2 P	SU $6^{7}2^{3}$	$fR^{5}_{m}MU^{3}LB^{2}$	-	9/1	NA	1	PMF/PRM	33D	78°25'	52°10'
527	0-1	U/5 F/4 R/1	6/5 P	7*/3 V	6/2 V	SU $3^{6}6^{4}$	$fR^{4}_{m}MU^{3}H^{2}LB^{1}$	-	10/0	NA	NA	PRM	32M	78°40'	52°00'
528	0-1	R/10	5/5 E	7/3 V	7*/2 V	SU 3^{10}	$FR^{5}_{m}fR^{3}_{m}LB^{2}$	-	10/0	NA	NA	NA	32M	78°20'	51°55'
530	0-1	F/6 U/4	7*/5 V	7*/3 S	6/2 P	SU 3^{10}	$MU^{6}LB^{2}fR^{2}_{m}$	-	10/0	NA	NA	PMM	32M	78°40'	51°40'
531	0-1	U/5 F/4 R/1	6/5 P	7*/3 V	6/2 V	SU $6^{7}3^{3}$	$fR^{4}_{m}MU^{3}H^{2}LB^{1}$	-	10/0	NA	NA	PMM	32M	78°55'	51°30'
533	0-1	R/5 U/3 F/2	5/5 E	7/3 V	7*/2 V	SU 3^{10}	$FR^{6}_{m}fR^{3}_{m}LB^{1}$	-	7/3	NA	2	PMF	32M	78°45'	51°35'
535	0-1	R/5 U/3 F/2	5/5 E	7/3 V	7*/2 V	SU 3^{10}	$FR^{6}_{m}fR^{3}_{m}LB^{1}$	-	5/5	NA	1	PMF	32M	78°45'	51°30'
537	0-1	R/5 U/3 F/2	5/5 E	7/3 V	7*/2 V	SU 3^{10}	$FR^{6}_{m}fR^{3}_{m}LB^{1}$	-	6/4	NA	1	PMF	32M	78°50'	51°20'
538	0-1	F/6 U/4	7*/5 V	7*/3 S	6/2 P	SU 10^{10}	$MU^{6}LB^{2}fR^{2}_{m}$	-	8/2	NA	1	PMF	32M	78°55'	51°15'
539	0-1	F/7 U/3	7*/5 V	7/4 V	5/1 P	SU 10^{10}	$MU^{6}LB^{4}$	-	10/0	NA	NA	NA	32M	79°15'	51°10'
949	0-1	U/5 F/4 R/1	6/5 P	7*/3 V	6/2 V	SU 10^{10}	$fR^{4}_{m}MU^{3}H^{2}LB^{1}$	-	10/0	NA	NA	PMM	32M	79°15'	51°30'

SA : Lac Sakami

547	0-2	U/6 F/4	7*/5 N	O/3	6/2 V	SU 6^{10}	$fR^{4}MU^{3}LB^{3}$	-	10/0	NA	NA	NA	33E	78°40'	54°00'
548	1-4	R/10	O/5	7/3 V	1/2 V	SU $6^{7}7^{3}$	$LB^{7}fR^{3}$	-	9/1	2	NA	HRL	33F	77°45'	53°55'
549	1-2	U/5 R/4 H/1	6/5 T	O/3	1/2 V	SU 6^{10}	$LB^{5}fR^{4}MU^{1}$	-	10/0	NA	NA	NA	33K	77°55'	54°05'
550	0-2	R/7 U/3	4*/6 T	5/3 E	7/1 V	SU 6^{10}	$fR^{6}LB^{3}A^{1}$	-	8/2	NA	1	PMF	33E	78°30'	53°45'
551	0-1	F/6 R/4	7*/5 N	O/3	7/2 V	SU 6^{10}	$LB^{4}MU^{3}fR^{3}$	-	10/0	NA	NA	NA	33E	78°35'	53°42'
552	1-2	R/10	O/5	6/3 H	7/2 V	SU 6^{10}	$LB^{6}fR^{3}MU^{1}$	-	10/0	NA	NA	NA	33E	78°40'	53°35'
553	1-2	U/5 F/3 R/2	7/5 S	O/3	6/2 H	SU 6^{10}	$MU^{5}LB^{3}fR^{2}$	-	9/1	2	NA	PRL	33E	78°20'	53°35'

(1) Ile de cuestas

SA : Lac Sakami

554	1-3	R/10	O/5	7 V/3	1 V/2	SU $6^{6}7^{4}$	$LB^{5}fR^{2}MU^{2}$	Br^{1}	9/1	2	NA	HRL	33F	77°50'	53°40'
555	1-2	U R/6 4	6 H/5	7 V/3	O/2	SU 6^{10}	$fR^{4}LB^{3}MU^{3}$	-	10/0	NA	NA	NA	33E	78°25'	53°27'
556	1-2	R/10	7 V/5	1 D/3	O/2	SU $6^{6}1^{4}$	$LB^{5}fR^{3}MU^{2}$	-	8/2	3	NA	PRL	33F	77°50'	53°30'
557	1-3	R U/6 4	6 T/5	7 V/3	6 V/2	SU $6^{5}1^{5}$	$fR^{6}LB^{3}MU^{1}$	-	10/0	NA	NA	NA	33F	77°25'	53°35'
558	1-3	R/10	O/5	7 V/3	6 H/2	SU 6^{10}	$LB^{5}fR^{3}MU^{2}$	-	10/0	NA	NA	NA	33E	78°10'	53°15'
559	1-2	U R/6 4	5 P/5	6 H/3	O/2	SU 6^{10}	$fR^{5}LB^{4}MU^{1}$	-	10/0	NA	NA	NA	33E	78°20'	53°20'
560	1-2	R/10	1 D/5	7 V/3	O/2	SU $3^{5}1^{5}$	$LB^{4}fR^{4}MU^{2}$	-	9/1	2	NA	PTL	33F	77°40'	53°25'
563	1-2	U/10	7 N/5	7 V/3	7 S/2	SU 6^{10}	$MU^{5}LB^{3}fR^{2}$	-	10/0	NA	NA	NA	33E	78°25'	53°10'
564	1-2	R/10	6 H/6	7 N/3	7 V/1	SU $6^{6}3^{4}$	$fR^{4}MU^{3}LB^{3}$	-	9/1	3	NA	PTL	33F	78°00'	53°10'
565	1-2	U F/6 4	7 S/5	7 V/3	7 N/2	SU 1^{10}	$MU^{4}LB^{3}fR^{3}$	-	9/1	2	NA	PTL	33F	77°25'	53°20'
567	0-1	U R/7 3	5 P/5	6 V/3	7 V/2	SU 6^{10}	$fR^{5}MU^{3}LB^{2}$	-	10/0	NA	NA	NA	33D	78°30'	52°58'
569	1-3	R/10	1 D/5	7 V/3	O/2	SU $6^{5}7^{3}3^{2}$	$LB^{4}fR^{4}MU^{2}$	-	10/0	NA	NA	NA	33F	77°45'	53°05'
570	1-3	R U/6 4	6 T/5	7 V/3	6 V/2	SU $6^{6}1^{4}$	$fR^{6}LB^{3}MU^{1}$	-	9/1	2	NA	PTL	33F	77°25'	53°10'
571	1-3	R H/6 4	5 E/5	O/4	7 V/1	SU $6^{4}3^{3}7^{3}$	$fR^{4}LB^{3}A^{1}$	Br^{2}	9/1	NA	1	HRF	33F	76°50'	53°40'
572	1-3	R/10	O/5	7 V/3	1 V/2	SU $6^{6}3^{4}$	$LB^{6}fR^{3}$	Br^{1}	9/1	2	NA	HRL	33F	76°20'	53°50'
573	2-5	H R M/6 3 1	O/5	1 V/3	1 A/2	SU $3^{7}6^{3}$	$LB^{7}fR^{3}$	-	10/0	NA	NA	NA	33G	75°55'	53°50'
574	2-5	F U R/5 3 2	7 V/5	7 N/3	O/2	SU $6^{5}3^{5}$	$LB^{4}fR^{3}MU^{2}$	Br^{1}	5/5	3	NA	PRL	33F	76°50'	53°20'
575	2-5	R U/6 4	5 P/5	7 V/3	7 N/2	SU 3^{10}	$fR^{4}LB^{4}MU^{2}$	-	10/0	NA	NA	NA	33F	76°10'	53°25'
577	2-5	R U/6 4	5 P/5	7 V/3	1 V/2	SU 3^{10}	$fR^{4}LB^{3}MU^{2}$	Br^{1}	9/1	3	NA	PML	33C	77°00'	52°55'
578	2-5	M H R/5 3 2	O/5	1 V/3	1 A/2	SU $6^{6}1^{4}$	$LB^{6}fR^{3}$	Br^{1}	9/1	2	NA	HRL	33F	76°05'	53°40'
579	2-5	H R/6 4	1 V/5	1 A/4	1 H/1	SU 6^{10}	$fR^{6}LB^{4}$	-	9/1	2	NA	HRL	33G	75°25'	53°35'
580	2-5	U R/6 4	2 T/5	7 V/3	2 H/2	SU 6^{10}	$fR^{3}LB^{3}MU^{2}$	Br^{2}	10/0	NA	NA	NA	33G	75°52'	53°35'
581	2-5	M H/6 4	1 V/5	1 A/3	O/2	SU 6^{10}	$fR^{8}LB^{2}$	-	9/1	NA	2	HRF	33G	75°15'	53°40'
582	2-5	U F/6 4	7 V/5	7 N/4	4*H/1	SU 6^{10}	$LB^{4}fR^{3}MU^{3}$	-	9/1	3	NA	PTL	33G	75°15'	53°50'
583	2-5	R/10	1 H/5	7 V/3	1 D/2	SU 6^{10}	$fR^{7}LB^{3}$	-	9/1	2	NA	PTL	33G	75°00'	53°55'
584	2-5	M H/6 4	O/5	1 V/3	1 A/2	SU $6^{8}7^{2}$	$fR^{7}LB^{3}$	-	10/0	NA	NA	NA	33G	74°45'	53°55'
585	2-5	U R/7 3	2 T/5	2 H/4	7 V/1	SU $6^{8}7^{2}$	$fR^{7}MU^{2}$	Br^{1}	9/1	2	NA	PTL	33G	74°30'	53°55'
586	2-5	R U/6 4	1 H/5	1 V/3	1 A/2	SU 6^{10}	$fR^{6}LB^{3}$	Br^{1}	8/2	2	NA	HTL	33G	74°30'	53°50'
587	2-5	H R/6 4	1 V/5	1 H/3	1 A/2	SU 6^{10}	$fR^{6}LB^{2}$	Br^{2}	10/0	NA	NA	NA	33G	74°32'	53°45'
588	2-5	R U/7 3	2 H/5	2 T/3	1 H/2	SU 6^{10}	$fR^{2}MU^{1}$	Br^{7}	9/1	2	NA	HTL	33G	74°45'	53°35'
589	2-5	H R M/5 3 2	1 V/5	O/3	1 A/2	SU 3^{10}	$fR^{5}LB^{5}$	-	8/2	2	NA	HRL	33F	76°00'	53°00'
590	1-3	U R/6 4	7 N/5	O/3	6 V/2	SU $6^{5}3^{5}$	$MU^{4}LB^{3}fR^{2}$	Br^{1}	10/0	NA	NA	NA	33C	77°50'	52°55'
591	0-2	U R/7 3	5 P/5	6 V/3	7 V/2	SU 6^{10}	$fR^{5}MU^{3}LB^{2}$	-	10/0	NA	NA	NA	33D	78°20'	52°40'
592	1-3	R/10	O/5	7 V/3	1 V/2	SU $6^{6}3^{4}$	$LB^{5}fR^{2}MU^{2}$	Br^{1}	9/1	3	NA	HRL	33C	77°45'	52°40'

SA : Lac Sakami

593	1-3	U R / 7 3	7 V / 5	7 S / 3	1 D / 2	SU $6^6 3^4$	$MU^7 fR^3 LB^2$	Br^2	10/0	NA	NA	NA	33C	77°40'	52°35'
594	2-4	R U / 6 4	6 T / 5	7 V / 3	6 V / 2	SU 3^{10}	$fR^5 LB^2 MU^1$	Br^2	10/0	NA	NA	NA	33C	77°10'	52°45'
595	2-5	R U H / 6 3 1	1 V / 5	O / 3	7 V / 2	SU 3^{10}	$fR^4 LB^4$	Br^2	9/1	3	NA	HRL	33C	76°55'	52°45'
596	1-4	R U / 6 4	6 T / 5	7 V / 3	6 V / 2	SU 6^{10}	$fR^6 LB^3 MU^1$	-	10/0	NA	NA	NA	33C	77°20'	52°30'
597	1-4	U / 10	5 P / 6	7 V / 3	1 V / 1	SU 3^{10}	$fR^5 LB^3 MU^2$	-	9/1	3	NA	PML	33C	77°05'	52°35'
598	2-5	U R / 7 3	7 V / 5	5 P / 3	1 V / 2	SU $3^5 6^5$	$LB^4 fR^4 MU^2$	-	9/1	3	NA	PML	33C	76°35'	52°40'
599	2-5	H R / 6 4	6 V / 5	O / 4	1 V / 1	SU 6^{10}	$fR^7 LB^3$	-	10/0	NA	NA	NA	33C	76°42'	52°30'
600	2-5	U R / 6 4	7 V / 5	1 V / 3	6 P / 2	SU $6^5 3^5$	$fR^6 LB^3 MU^1$	-	8/2	3	NA	PTL	33C	76°15'	52°40'
601	2-5	H R M / 5 3 2	1 V / 5	O / 3	1 A / 2	SU $6^5 3^5$	$fR^5 LB^5$	-	10/0	NA	NA	NA	33B	76°55'	52°42'
602	2-5	H R M / 5 3 2	1 V / 5	O / 3	1 A / 2	SU 6^{10}	$fR^5 LB^4$	Br^1	9/1	3	NA	HRL	33B	76°00'	52°30'
927	1-3	H / 10	O / 7	7 V / 3		SU 3^{10}	$LB^5 fR^3$	Br^2	8/2	3	NA	HRL	33C	77°25'	52°50'

SC : Schefferville Hills

732	2-6	R U / 6 4	1 A / 5	1 V / 3	1 D / 2	SU $7^4 6^3 8^3$	$LB^5 LI^3 A^2$	-	9/1	NA	2	HRF	23N	68°10'	55°35'
733	2-6	H R / 6 4	1 D / 5	1 A / 3	1 V / 2	SU 6^{10}	$LI^4 A^3 LB^3$	-	10/0	NA	NA	NA	23N	68°05'	55°25'
771	4-10	M / 10	O / 5	1 V / 3	8 L / 2	CH $Fe^6 3^4$	$LI^6 A^2 DE^2$	-	10/0	NA	NA	NA	23O	67°35'	55°15'
773	5-10	M H / 6 4	1 V / 5	1 A / 3	O / 2	SU $8^7 7^2 6^1$	$LI^5 A^3 LB^1 DE^1$	-	10/0	NA	NA	NA	23K	68°10'	54°40'

SJ : Lac-Saint-Jean Plain

135	1-2	U R H / 3 3 4	5 E / 7	5 P / 2	O / 1	GR 1^{10}	$\frac{FM^1}{r}\frac{FF^1}{j}$	C^8	10/0	NA	NA	NA	32H	72°35'	48°55'
136	0-2	F U R / 6 2 2	3 T / 4	7 N / 3	9 H / 3	GR $1^4 4^4 5^2$	$MU^3 \frac{FM^2}{j}\frac{FR^1}{j\&r}$	$C^3 Br^1$	7/3	3	2	PML/PMF	32H	72°10'	48°40'
137	1-6	F U R / 4 4 2	5 E / 4	5 P / 3	O / 3	GR $5^5 1^3 4^2$	$MU^3 \frac{FM^2}{j}\frac{FF^{*1}}{r}$	C^4	10/0	NA	NA	NA	32H	72°05'	48°55'
138	0-2	U F H / 4 4 2	5 P / 4	5 E / 4	6 H / 2	GR $6^5 4^5$	$\frac{FM^1}{j}$	C^9	5/5	3	NA	PML	32H	72°00'	48°27'
139	0-2	R H U / 6 3 1	5 E / 5	O / 3	5*E / 2	GR 4^{10}	$\frac{FM^4}{j}$	C^6	5/5	3	2	PML/PMF	22D	71°45'	48°35'
140	0-2	H U F / 4 3 3	5 E / 4	5*E / 2	5 P / 4	GR $4^6 6^4$	$\frac{FM^1}{r}\frac{FF^1}{j}$	C^8	9/1	2	NA	PML	22D	71°40'	48°40'

SK : Saglou-Koartac

803	0-5	M H / 8 2	O H / 9	8 L / 1		CH 1^{10}	$DE^6 LI^3 A^1$	-	10/0	NA	NA	CBM	35J	75°45'	62°15'
804	0-6	M H / 6 4	O H / 8	8 L / 2		CH 1^{10}	$DE^6 LI^3 A^1$	-	10/0	NA	NA	CBM	35I	73°00'	62°05'
805	0-5	H M R / 5 3 2	O H / 9	1 V / 1		CH 1^{10}	$DE^7 LI^2 A^1$	-	9/1	1	NA	HRL/CBM	25E	71°00'	61°05'
806	0-3	U R / 7 3	O H / 7	6 V / 2	7 V / 1	CH 1^{10}	$DE^7 LI^2 MU^1$	-	9/1	1	NA	PRL/CBM	25C	69°55'	60°30'
807	0-3	R H / 6 4	O R / 6	1 V / 3	7 V / 1	CH $4^9 Fe^1$	$DE^8 LI^1 MU^1$	-	9/1	1	NA	PRL	25C	70°05'	60°15'

SLI : Lower Mid Saint-Laurent ur

17	1-2	R H U / 5 3 2	1 A / 5	1 V / 3	6 T / 2	GR $8^5 5^3 4^2$	$\frac{FF^6}{j}\frac{FM^4}{j}$	-	10/0	NA	NA	NA	31H	73°55'	45°50'
18	1-2	R U / 6 4	5 E / 5	6 T / 5		GR $8^8 4^1 6^1$	$\frac{FF^2}{j}\frac{FM^1}{j}$	C^7	10/0	NA	NA	NA	31I	73°30'	46°10'
19	1-3	R H / 6 4	1 A / 5	6 T / 3	1 V / 2	GR $8^6 6^2 2^2$	$\frac{FF^7}{j}\frac{FF^1}{m}\frac{FM^1}{j}$	C^1	10/0	NA	NA	NA	31I	73°10'	46°20'
20	0-2	R U H / 5 3 2	5 P / 5	5 E / 3	5*T / 2	SL $3^4 2^2 2^2$ GR $2^4 8^2$	$\frac{FM^2}{j}\frac{FF^1}{j}\frac{FR^1}{j}A^1$	C^5	9/1	NA	1	PMF	31I	72°30'	46°30'
21	0-3	U F R / 5 4 1	6 T / 5	2 H / 3	7 N / 2	SL $3^2 4^1$ AP 1^7	$\frac{FM^3}{m}\frac{FF^1}{m}$	C^6	9/1	NA	1	HCF	21L	71°40'	46°25'

SLi : Lower Mid Saint-Laurent

22	0-2	U H / 7 3	1 A / 6	1 V / 4		SL $1^{8}3^{2}$	FM^{2} FF^{1} / j m	C^{7}	9/1	NA	1	HCF	21L	71°00'	46°50'

SLs : Upper Mid Saint-Laurent and Eastern Townships

10	0-1	F U / 5 5	5 P / 4	5 E / 3	6 T / 3	SL $1^{5}2^{3}3^{2}$	FM^{1} FF^{1} / j j	C^{8}	10/0	NA	NA	NA	31H	73°40'	45°50'
11	0-1	F / 10	5 P / 8	4*P / 2		SL $4^{5}2^{3}3^{2}$	FF^{1} / j&m	C^{9}	6/4	3	1	PML/PMF	31I	72°50'	46°10'
12	0-2	F U / 6 4	6 T / 4	5 P / 4	5 E / 2	SL $3^{3}4^{2}$ AP 1^{5}	FF^{1} FM^{1} FF^{1} / j j m	C^{7}	10/0	NA	NA	NA	31H	72°20'	46°00'
13	0-1	U R / 8 2	5 P / 8	5 E / 2		SL $1^{3}3^{2}$ AP 1^{5}	FF^{1} / m	C^{9}	10/0	NA	NA	NA	31H	72°50'	45°40'
14	1-2	R H / 6 4	1 A / 5	1 V / 3	6 T / 2	AP 1^{10}	FF^{2} FF^{1} FM^{1} / m j m	C^{6}	10/0	NA	NA	NA	31H	72°45'	45°20'
15	2-5	H M R / 5 4 1	1 A / 5	1 V / 4	2 T / 1	AP $1^{7}3^{2}4^{1}$	FF^{3} FM^{1} / m m&j	C^{6}	10/0	NA	NA	NA	31H	72°35'	45°25'
16	1-5	H R / 6 4	1 A / 5	1 V / 3	4*A / 2	AP $5^{5}1^{4}3^{1}$	FM^{3} FF^{2} / j&m m	C^{5}	10/0	NA	NA	NA	21E	70°40'	45°25'

SM : Smallwood Reservoir

970	5-7	U F / 5 5	O R / 2	1 H / 3	7*V / 5	CH 1^{10}	MU^{5} LB^{3} LI^{2}	-	8/2	2	NA	PTL	23I	65°54'	50°56'
980	4-7	R U / 6 4	1 D / 4	O R / 3	7*V / 3	CH $3^{9}5^{1}$	LB^{5} MU^{3} LI^{2}	-	8/2	2	NA	PRL	23O	66°15'	55°05'
982	3-6	R U / 6 4	1 H / 5	1 V / 3	O H / 2	CH 1^{10}	LB^{8} LI^{2}	-	2/8	3	NA	PTL	23I	64°12'	54°45'

SP : Rivière Saint-Paul

794	1-6	H M R / 5 3 2	1 V / 6	1 A / 4		GR $2^{7}1^{3}$	fR^{5} MU^{5} / m	-	10/0	NA	NA	NA	12P	57°25'	51°50'

TA : Lac Tassialuk

838	1-2	U R / 9 1	1 H / 7	1 V / 2	O H / 1	SU $6^{9}8^{1}$	LI^{5} DE^{3} MU^{2}	-	7/3	2	NA	PTL	34J	75°45'	58°45'
839	2-3	R U H / 6 3 1	1 V / 4	O H / 4	1 A / 2	SU $8^{6}7^{2}6^{2}$	LI^{7} DE^{3}	-	7/3	2	NA	PRL	34J	74°30'	58°30'
840	1-3	R U / 6 4	1 V / 5	O H / 3	1 H / 2	SU $8^{4}7^{3}6^{3}$	LI^{6} DE^{3} MU^{1}	-	6/4	2/3	NA	PTL/PRL	34I	73°00'	58°55'
841	0-2	M H U / 5 4 1	O H / 6	8 L / 3	7 V / 1	SU $6^{8}8^{2}$	LI^{6} DE^{2} MU^{1} A^{1}	-	9/1	NA	2	HCF	34P	72°30'	59°52'
842	2-3	R U / 6 4	O H / 6	1 V / 3	7 V / 1	SU $8^{6}6^{4}$	DE^{6} LI^{3} MU^{1}	-	8/2	2	NA	PRL	34P	72°30'	59°30'
843	2-3	U R / 6 4	1 H / 8	O H / 2		SU 6^{10}	LI^{5} DE^{4} MU^{1}	-	3/7	3	NA	PTL	34P	72°01'	59°30'
844	1-3	U R / 8 2	1 H / 7	1 V / 2	7 V / 1	SU 6^{10}	DE^{5} LI^{4} MU^{1}	-	7/3	2	NA	PTL	24M	71°30'	59°35'
845	0-3	R H U / 6 2 2	O H / 5	1 A / 4	7 V / 1	CH 1^{10}	DE^{4} LI^{4} MU^{1} A^{1}	-	9/1	1	3	HRL/CCF	25D	70°45'	60°01'
846	1-2	U R / 8 2	1 D / 6	1 H / 2	7 V / 2	CH 1^{9}Fe^{1}	DE^{4} LI^{4} MU^{2}	-	7/3	2	NA	PTL	24M	70°30'	59°45'
847	1-3	U R / 7 3	1 H / 7	O H / 2	7 V / 1	SU $6^{8}8^{2}$	DE^{4} LI^{3} MU^{2} A^{1}	-	9/1	2	NA	PRL	24M	70°30'	59°20'
849	2-3	U R / 7 3	O H / 7	1 V / 2	7 V / 1	SU $6^{8}3^{2}$	DE^{5} LI^{4} MU^{1}	-	9/1	1	NA	PRL	24L	71°05'	58°40'
850	2	U R / 8 2	1 D / 5	1 H / 4	7 V / 1	SU 6^{10}	LI^{6} DE^{3} MU^{1}	-	9/1	2	NA	PTL	24L	71°45'	58°35'

TB : Mont-Tremblant

799	4-10	M H R / 5 3 2	1 A / 6	1 V / 4		GR $8^{5}3^{1}2^{2}$	FF^{5} FM^{4} FR^{1} / m m j	-	10/0	NA	NA	NA	31J	74°25'	46°20'
800	4-10	M / 10	1 V / 10			GR $8^{6}1^{4}$	FF^{6} FM^{4} / m j	-	10/0	NA	NA	NA	31I	73°55'	46°25'

TH : Lac Thévenet

878	0-3	M R U / 4 4 2	O R / 5	1 H / 3	7 V / 2	CH $3^{5}4^{3}5^{2}$	DE^{3} LI^{3} LB^{3} MU^{1}	-	7/3	2	NA	HRL/PTL	24K	69°45'	58°15'
879	0-2	U R H / 5 3 2	O R / 4	1 H / 4	7 V / 2	CH $1^{5}3^{3}5^{2}$	LI^{4} DE^{2} LB^{2} MU^{2}	-	8/2	3	NA	PRL/PTL	24K	68°50'	58°30'

TR : Rivière Trenche Uplands

231	2–8	H R / 5 5	1 V / 5	1 A / 4	2 H / 1	GR $1^{5}6^{3}8^{2}$	FR^{4} FM^{3} FR^{1} / j&r j m	Ct^{2}	10/0	NA	NA	NA	32A	73°00'	48°40'
232	2–6	H R / 6 4	1 V / 5	O / 2	1 A / 3	GR 1^{10}	FR^{5} FM^{4} FF^{1} / j j&r j	–	10/0	NA	NA	NA	32A	72°55'	48°30'

UN : Ungava Bay

876	0–2	U R / 7 3	O H / 5	7 V / 4	6 V / 1	CH 1^{10}	MU^{4}LI^{3}DE^{2}A^{1}	–	10/0	NA	NA	NA	24N	69°45'	59°30'
848	0–4	R M U / 4 3 3	1 V / 4	O R / 3	6 V / 3	CH $3^{5}4^{5}$	LI^{4}DE^{3}MU^{2}A^{1}	–	7/3	2	NA	PRL	24K	69°45'	58°55'
877	0–2	R U H / 6 3 1	O H / 9	6 V / 1		CH 1^{10}	DE^{9}A^{1}	–	9/1	2	NA	HRL	24P	65°30'	59°05'

VA : Lac Vallard

128	5–10	F / 10	7 N / 6	1 D / 2	1 H / 2	GR 3^{10}	MU^{5}LB^{2}fR^{2}	Br^{1}	9/1	3	NA	PTL	23B	66°25'	52°45'
129	5–10	U / 10	1 D / 5	7 N / 3	2 H / 2	GR $2+1^{10}$	fR^{6}MU^{3}LB^{1}	–	9/1	3	NA	PTL	23B	66°20'	52°53'
475	5–10	U R / 6 4	1 H / 6	1 D / 3	1 V / 1	GR $3^{9}4^{1}$	LB^{5} fR^{3} / m	Br^{2}	9/1	3	NA	HTL	23B	67°40'	52°10'
478	4–10	R U H / 5 3 2	1 H / 5	1 V / 4	2 T / 1	GR $3^{6}Fe^{4}$	LB^{5} fR^{4} / m	Br^{1}	9/1	3	NA	HTL	23B	67°05'	52°30'
480	5–10	U R / 6 4	1 H / 6	1 D / 3	2 T / 1	GR $3^{8}1^{2}$	fR^{4}LB^{5} / r&j	Br^{1}	9/1	2	NA	HTL	23B	66°45'	52°10'
481	5–10	U / 10	1 D / 5	7*V / 3	1 H / 2	GR 3^{10}	fR^{4}MU^{2}LB^{2} / m	Br^{2}	9/1	3	NA	PTL	23B	66°20'	52°10'
482	5–10	R U / 6 4	1 D / 5	1 H / 3	1 A / 2	GR $2+1^{10}$	fR^{7}LB^{2} / m&r	Br^{1}	10/0	NA	NA	NA	22O	66°20'	51°50'
483	5–10	U R / 6 4	1 H / 6	2 H / 3	7 V / 1	GR $2+1^{10}$	fR^{6}LB^{2} / r&m	Br^{2}	9/1	3	3	HTL/CDF	23B	66°10'	52°00'
484	5–10	R U / 6 4	1 D / 5	1 H / 4	1 A / 1	GR $6^{4}2^{4}1^{2}$	fR^{6}LB^{2} / m	Br^{2}	10/0	NA	NA	NA	22P	65°45'	51°45'
509	5–10	H R / 6 4	1 V / 10			GR 2^{10}	fR^{3}LB^{2}KR-LI-DE^{2} / m	Br^{3}	10/0	NA	NA	NA	22P	65°37'	51°58'
510	5–10	U / 10	1 H / 5	7*V / 4	1 V / 1	GR $2^{8}1^{2}$	fR^{6}LB–MU^{3} / m	Br^{1}	9/1	3	NA	HTL	22P	65°35'	51°50'
511	5–10	H / 10	1 V / 6	1 D / 4		GR $6^{5}2^{3}1^{2}$	fR^{10} / m	–	10/0	NA	NA	NA	22P	65°10'	51°50'
647	5–10	R H / 7 3	1 A / 5	1 V / 4	2 H / 1	SU 8^{10}	LB^{6}fR^{3}LI^{1}	–	8/2	3	NA	PTL	23G	67°20'	53°20'
642	5–10	R U H / 5 3 2	1 A / 5	1 H / 3	1 D / 2	SU $6^{6}8^{4}$	fR^{4}LB^{3}	Br^{3}	9/1	3	NA	HTL	23C	69°15'	52°40'
648	5–10	U R / 6 4	1 A / 5	1 H / 3	1 D / 2	SU $7^{5}6^{5}$	fR^{7}LB^{2}	Br^{1}	10/0	NA	NA	NA	23D	70°13'	52°20'

VO : Vauréal Observation

251	0–2	U R H / 5 4 1	O* / 6	O / 2	6 T / 2	SL 4^{10}	FR^{7} FM^{2} / m&r&j m	Ct^{1}	10/0	NA	NA	HRM	12E	63°00'	49°42'
252	0–1	U H / 5 5	O / 3	8 L / 3	6 T / 4	SL $4^{8}5^{2}$	MU^{5}FR^{5} / j&m	–	10/0	NA	NA	HRM	12F	62°00'	49°20'

Part B
Acid Precipitation Sensitivity Evaluation of Quebec

1.0 INTRODUCTION

Acid precipitation and its environmental impacts have become a topic of increasing concern in Canada. The Lands Directorate of Environment Canada, through the Long Range Transport of Airborne Pollutants (LRTAP) Program, has focused research on improving our understanding of the behaviour of ecosystems subjected to acid loading, and the sensitivity of these ecosystems to degradation as a result of acid precipitation. This report is one of a series of studies directed at separate regions of Canada.

This study addresses an interpretation of the potential capacity of terrestrial ecosystems to reduce the acidity of precipitation and the subsequent sensitivity of aquatic systems to acid precipitation within the Province of Quebec. It is based on an evaluation of the potential of soils and bedrock to reduce the acidity of acidic deposition in rain and snowfall. A map in the pocket at the back of this report, at a scale of 1:2 500 000, presents an assessment of the lands at risk within the framework of the landscape ecodistricts of Quebec, and is intended for regional-level applications. The sensitivity evaluation closely follows the methodology developed by Lucas and Cowell (1984) using the Quebec ecodistrict data base developed in part A of this report by G. Gilbert, R.G. Hélie and J.M. Mondoux as the major data source. The results provide a complete geographic coverage of Quebec; describe the dominant sensitivity to aquatic acidification within each ecodistrict; indicate the dominant and subdominant potential of the soil and bedrock system to reduce acid deposition in each ecodistrict; and provide a direct linkage to the ecological land survey of Quebec (Part A of this report).

2.0 RATIONALE FOR STUDY

Researchers have previously addressed the problem of environmental sensitivity to acid precipitation by using single-factor indicators keying on a specific land characteristic. Cowell et al (1981) have reviewed the existing evaluation systems in developing a combined soil/bedrock system. The Lands Directorate, in its involvement with the Canada-United States Memorandum of Intent (MOI) on Transboundary Air Pollution final report (Memorandum of Intent, 1983), prepared a map entitled "Potential of Soil and Bedrock to Reduce the Acidity of Incoming Acidic Deposition for Eastern Canada". This contribution has improved our knowledge of acid precipitation sensitivity and terrestrial effects on aquatic regimes. Several studies have examined parts of Quebec in their mapping including Wang and Coote, 1981; Robitaille, 1981; Shilts et al, 1981; Memorandum of Intent, 1983) but none provides both complete coverage of the Province and a direct link to any single, comprehensive data base to facilitate secondary, user-directed applications. For these reasons, this study was conceived to apply the ecological information base for the Province of Quebec. This contributes to a Lands Directorate LRTAP objective of providing complete map coverage of eastern Canada as to its sensitivity to degradation from acid precipitation based on the evaluation of the potential of soils and bedrock to reduce acidic atmospheric inputs.

While this study builds upon the previously published sensitivity mapping effort (Memorandum of Intent, 1983) a number of refinements are incorporated to enhance its applicability. They are as follows:

- complete geographic coverage of Quebec;
- presentation of the potential of both dominant and sub-dominant soils and bedrock systems to reduce the acidity of atmospheric inputs therefore giving a more comprehensive indication of the homogeneity of materials and their sensitivity in the ecosystems to degradation within each ecodistrict map unit;
- colour shading of map units to highlight the dominant interpretation of acidity reducing capacity and associated general sensitivity to degradation; and
- direct reliance upon a single spatial framework with a comprehensive data source of consistent scale. This has facilitated linkage of the study results to the original ecological data.

3.0 OPERATIONAL CONCEPTS

Four key concepts are used in this study. (1) Ecosystem degradation by acidification or "ecosystem sensitivity" is founded on the hypothesis that the sensitivity of these ecosystems to atmospheric inputs is inversely related to the potential of soils and bedrock to reduce the acidity of these inputs. (2) The ecosystems which are presently highly acidified are the most sensitive to further degradation from additional acid inputs, since neutralizing agents within the system are already severely limited (Memorandum of Intent, 1983). (3) The sensitivity of wetland ecosystems and their effects on aquatic ecosystems are left "unrated" in this evaluation since the chemical dynamics of

fens, bogs, swamps and marshes in the Quebec terrestrial ecosystem remain poorly understood. Map units dominated by several categories of wetlands are, however, clearly identified on the map and legend presented in the pocket at the back of the report. (4) Ecodistricts provide an effective framework for this evaluation as they contain comprehensive regional information on the spatial distribution of soils and bedrock at a map scale of 1:2 500 000. Hence, ecodistricts, defined as "an area of land characterized by a distinctive assemblage of relief, geology, geomorphology, vegetation, soils, water and fauna (Canada Committee on Ecological Land Classification, 1979) are the basic mapping stratification used in this study.

4.0 METHODOLOGY

4.1 Evaluation of Buffering Capacity and Ecosystem Sensitivity

The methodology for evaluating the potential of soils and bedrock to reduce the acidity of atmospheric inputs and for interpreting the sensitivity of the ecosystem to degradation from acid precipitation is based on the approach proposed by Cowell et al (1981), subsequently refined by Lucas and Cowell (1984), and applied in the Lands Directorate MOI mapping (Memorandum of Intent, 1983).

To determine the ratings of the potential acidity reducing capacity of each ecodistrict, two soil parameters are considered: texture and depth. Interpretation of general soil chemistry as per the Lucas and Cowell (1984) model has been quite restricted due to lack of suitable data across most of Quebec, unlike the Memorandum of Intent (1983) interpretations in Ontario. In the later case, the Ontario Land Inventory petrography data base made this task much more straight forward. A "low potential to reduce acidity" is inferred for coarse textured soils, such as sand, and a "high potential to reduce acidity" is associated with fine textured clays. Depth is significant in determining the volume of soil material available to reduce acidity as well as the degree of influence of the bedrock. As outlined in Table 1, shallow soils (< 1 m), especially coarse textured materials, have a potential acidity reducing capacity which is strongly influenced by the buffering capacity of underlying bedrock. The capacity of various bedrock types to buffer acidity follows the groupings developed by Shilts et al (1981), as presented in Table 2.

In Table 1, all mineral soils underlain by Type 1 bedrock (limestone, etc.) are assessed as having a high buffering capacity, regardless of the soil texture or depth. The effect of soil hardpans and permafrost is not considered, due to insufficient data on the spatial distribution of these factors in Quebec. In a similar study for the Northwest Territories, Lucas (1985) has considered these two factors. In terrain dominated by soils with fragic or duric horizons or in peatlands or mineral soils with permafrost, underlying bedrock is not considered. In these cases only surficial materials are critical in the evaluation since the chemistry of the sections of the profile above and below such an interface usually do not interact. Type 4 bedrock (granite, etc.) is interpreted as having a low buffering capacity. Therefore, areas underlain by these types of rocks rely on the soil materials to provide buffering. Types 2 and 3 bedrock have a moderate buffering capacity. Their influence is most evident in shallow, sandy soils where the bedrock contributes significantly to the buffering capacity of the ecosystem.

The response of organic terrain to acidic inputs is poorly understood at this time. They are therefore excluded from the sensitivity evaluation. A distinction, however is made between minerotrophic and ombrotrophic wetlands. Minerotrophic (carbonate rich) wetland conditions usually occur over limestone and dolomite substrates and, in rare instances, over Canadian Shield areas where groundwater influences are active. These wetlands include fens, as well as swamps and marshes, may be well buffered, and usually have a high acidity neutralizing capacity. Ombrotrophic (carbonate poor) wetlands, including bogs and some poor fens, are common in Canadian Shield upland environments (Memorandum of Intent, 1983), and these may have a low acidity neutralizing capacity (Anderson, 1986).

Inherent in the Lucas and Cowell (1984) methodology and subsequently in this study, are limitations in the interpretation of results including the following:

- The acidity reducing capacity of soils and bedrock is solely based on soil texture, soil depth, and bedrock type assuming simple basin flow conditions with no consideration given to soil and groundwater residence time, to the influence of relief and drainage parameters on the flow regime, and to the influence of surface vegetation on the incident precipitation.
- Inferences of ecosystem sensitivity do not take into consideration the wide local variations in the characteristics of the differing ecosystems present.

Table 1: Potential of Soils and Bedrock to Reduce Acidity

(After Lucas and Cowell, 1984)

RATING OF SOIL/BEDROCK POTENTIAL TO REDUCE ACIDITY	MAP LEGEND SYMBOL	SOIL DEPTH[1]	SOIL TEXTURE	BEDROCK TYPE[2]	GENERAL AQUATIC ECOSYSTEM DEGRADATION SENSITIVITY
Low	L	deep	sand	Type 4	High
		deep	sand	Type 3	
		deep	sand	Type 2	
		shallow	sand	Type 4	
		barren	----	Type 4	
Moderate	M	deep	loam	Type 4	Moderate
		deep	loam	Type 3	
		deep	loam	Type 2	
		shallow	loam	Type 3	
		shallow	loam	Type 2	
		shallow	clay	Type 4	
		shallow	sand	Type 3	
		shallow	sand	Type 2	
		barren	----	Type 3	
		barren	----	Type 2	
High	H	deep	clay	Type 4	Low
		deep	clay	Type 3	
		deep	clay	Type 2	
		shallow	clay	Type 3	
		shallow	clay	Type 2	
		bare	----	Type 1	
		shallow	sand	Type 1	
		shallow	loam	Type 1	
		shallow	clay	Type 1	
		deep	sand	Type 1	
		deep	loam	Type 1	
		deep	clay	Type 1	
Not Rated	Oo	ombrotrophic	organic	Type 4	Unknown
		wetlands	organic	Type 3	
			organic	Type 2	
			organic	Type 1	
	Om	minerotrophic	organic	Type 4	
		wetlands	organic	Type 3	
			organic	Type 2	
			organic	Type 1	

[1]Soil depth is defined as follows: deep - over 1 m average soil thickness
shallow - 25 cm-1 m average soil thickness
bare - less than 25 cm average soil thickness

[2]Bedrock Types 1-4 are outlined in Table 2.

- The mobilization of heavy metal ions and their ecological effects are not considered.

The original focus of the Cowell et al (1981) and the Lucas and Cowell (1984) model was primarily to address aquatic ecosystem sensitivity, for which there is a better understanding scientifically. Some initial verification of the degree of effectiveness of the model has been supported by Whitelaw (1984), and other, as yet unpublished, research in the Quebec Region by Environment Canada. Correlations between aquatic sensitivity and species terrestrial factors support the general sensitivity ratings as applied in the MOI and in this study.

Application of the Lucas and Cowell (1984) approach to draw inferences on the sensitivity of terrestrial ecosystems to acid precipitation, however, may be tenuous, since definitive empirical data identifying cause-effect linkages with respect to impacts of acidic deposition on forest and agricultural systems is still lacking. One must identify a target process, in this case the acidity reducing capacity of soils and bedrock, and then make specific assumptions regarding ecosystem interaction which result in significant impacts (Memorandum of Intent, 1983). Empirical data is now being developed through studies such as Lachance and Gamache (1985) to deal with this gap in knowledge.

4.2 Mapping Methodology

The mapping phase of this project focussed on the landscape ecodistricts of Quebec at 1:2 500 000 and their related descriptive data as presented by G. Gilbert et al, in part A of this report. Soil texture and depth were determined from parameters in this data base as set out in Table 3. An assessment of bedrock buffering capacity was applied directly to bedrock parameters in the data base (Table 2). Soil carbonate data, where available, was applied as per Lucas and Cowell (1984).

Soil and bedrock assessments were then combined and a rating of low, moderate or high potential to reduce the acidity of atmospheric precipitation inputs was rendered for each combination of soil and bedrock conditions outlined in Table 1.

The acidity reducing capacity of organic ecosystems was not evaluated. However, as previously noted, minerotrophic were distinguished from ombrotrophic wetlands based on the ecodistrict data base. The potential to reduce acidity interpretation of the various soil and bedrock combinations and the occurrence of organics in each ecodistrict was then mapped using an alphanumeric code (see map legend). This shows the percentage of the terrain within each ecodistrict having the given interpretation of potential to reduce and, where applicable, the percentage of the ecodistrict area which is organic terrain. Up to three soil and bedrock combinations are recorded on each unit to distinguish the primary, secondary and tertiary interpretations. Each ecodistrict was then color shaded based on primary interpretation of the potential to reduce acidity. Areas having a low potential to reduce acidic inputs are given a red shading, suggesting a high sensitivity to aquatic acidification and a high likelihood for ecosystem degradation. Areas having a moderate acidity reducing potential are yellow shaded and are associated with a "moderate" sensitivity to aquatic acidification and ecosystem degradation. Areas with a high acidity reducing potential are shaded green and are assessed as having a "low" sensitivity to aquatic acidification and "low" probability of ecosystem degradation. Both minerotrophic and ombrotrophic organic ecosystems are shaded grey-brown as no interpretation is made.

In some ecodistricts, no single surficial material is clearly dominant. In these instances, the reducing potential of all combined soil and bedrock materials, and the contribution of buffering capacity from tertiary deposits and from subdominant bedrock characteristics are evaluated to determine the dominant acidity reducing interpretation.

5.0 DISCUSSION AND CONCLUSIONS

The interpretations in this report and accompanying map indicate that approximately 80% of Quebec has soils and bedrock with a low potential to reduce acidity. These areas are characterized by naturally acidic, sandy, podzolic soils and generally felsic bedrock of the Canadian Shield. Aquatic ecosystems within these areas are highly sensitive to acidification wherever significant levels of airborne acidic pollutants occur. For these aquatic ecosystems, a loading of 20 kg/ha/yr of wet sulphate in precipitation is considered to be associated with degradation of the more sensitive waters. For terrestrial ecosystems, critical thresholds have not been defined (Memorandum of Intent, 1983). Both federal and provincial research are currently addressing national and regional terrestrial target loadings for sulphate depositions, how such targets may vary from region to region in

Table 2: Bedrock Buffering Capacity (After Shilts *et al*, 1981)

CLASS	BEDROCK TYPES	BEDROCK POTENTIAL TO REDUCE ACIDITY
1	Limestone, marble, dolomite	High
2	Carbonate-rich siliceous sedimentary: shale, limestone; noncalcareous siliceous with carbonate interbeds: shale, siltstone, dolomite; quartzose sandstone with carbonates	Moderate to High
3	Ultramafic rocks, serpentine, noncalcareous siliceous sedimentary rocks: black shale, slate, chert; gabbro, anorthosite; gabbro, diorite; basaltic and associated sedimentary mafic volcanic rocks	Moderate to Low
4	Granite, gneiss, quartzose sandstone, syenitic and associated alkalic rocks.	Low

Canada, and the effect of precipitation variation across Canada.

Approximately 6% of the study area has an interpretation for moderate potential to reduce acidity, and thus may be moderately sensitive to aquatic acidification where significant acidic deposition occurs. These areas are typically covered with a thin sandy soil underlain by carbonate, ultramafic or mafic volcanic bedrock. Several prominent areas are located along the Saguenay River, the Gaspé Peninsula, Anticosti Island, along a portion of the north shore of the Gulf of Saint Lawrence, and along the southwestern Ungava Bay coastline.

Approximately 8% of the study area, primarily along the Quebec-Ontario border, in the James Bay Lowland, and along the Saint Lawrence Lowland, is interpreted as having a high potential to reduce the acidity in deposition, generally due to the presence of carbonate rich, clayey soils, and limestone bedrock, or both. These well buffered areas are considered to have a low sensitivity to aquatic acidification and generally a low overall sensitivity to ecosystem degradation. The remaining 4% or so of Quebec is organic terrain.

This study presents the final results of over four years of research and data base development. The map of Quebec and methodology outlined complement parallel studies underway in the Ontario, Atlantic and Northern regions of Canada. The Quebec ecological data base is also being applied to ecosystem LRTAP resources at risk assessments and ecosystem modelling studies.

Table 3: Relationships Between Surficial Deposits and Soil Textures (After Gilbert *et al*, 1985)

CLASS	SURFICIAL DEPOSIT	DOMINANT SOIL TEXTURE
1.	Undifferentiated glacial moraine	sandy
2.	Glaciofluvial material	sandy
3.	Deltaic deposits	sandy
4.	Glaciolacustrine material	clayey
4*.	Coarse grained glaciolacustrine material and alluvium of variable texture	sandy
5.	Marine clays	clayey
5*.	Sandy sediments of variable thickness (>2 m), sometimes stony and overlying clay	sandy
6.	Sandy to gravely littoral deposits	sandy
7.	Ombrotrophic organic deposits	organic
7*.	Minerotrophic organic deposits	organic
8.	Colluvium, material derived from in situ alteration on slope	sandy to loamy
9.	Aeolian deposits	sandy
10.	Exposed rock	-----
11*.	Residium, rock subjected to in situ alteration	sandy to loamy

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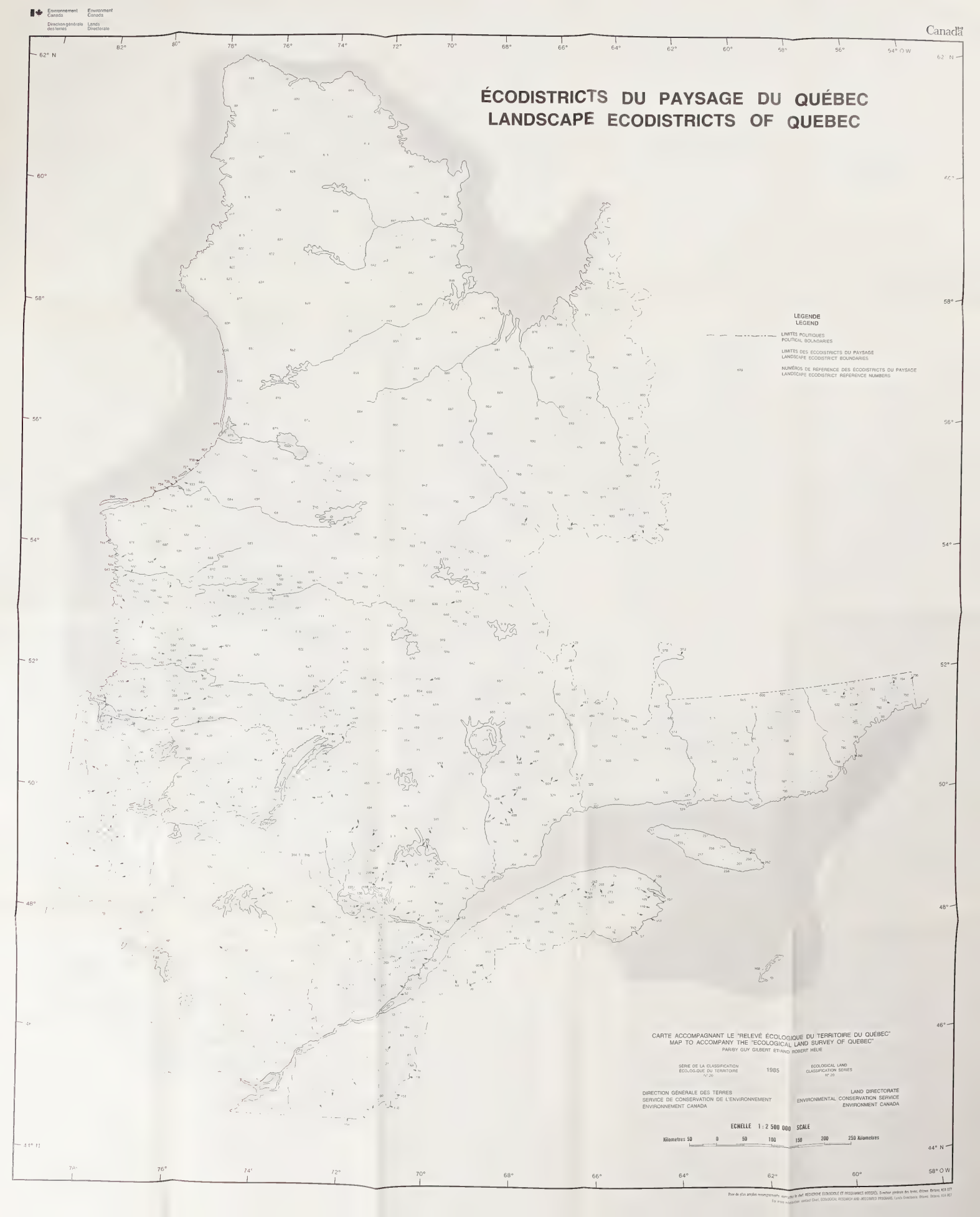

CARTE ACCOMPAGNANT LE "RELEVÉ ÉCOLOGIQUE DU TERRITOIRE DU QUÉBEC"
MAP TO ACCOMPANY THE "ECOLOGICAL LAND SURVEY OF QUEBEC"

PAR/BY GUY GILBERT ET/AND ROBERT HÉLIE

SÉRIE DE LA CLASSIFICATION ÉCOLOGIQUE DU TERRITOIRE N° 20

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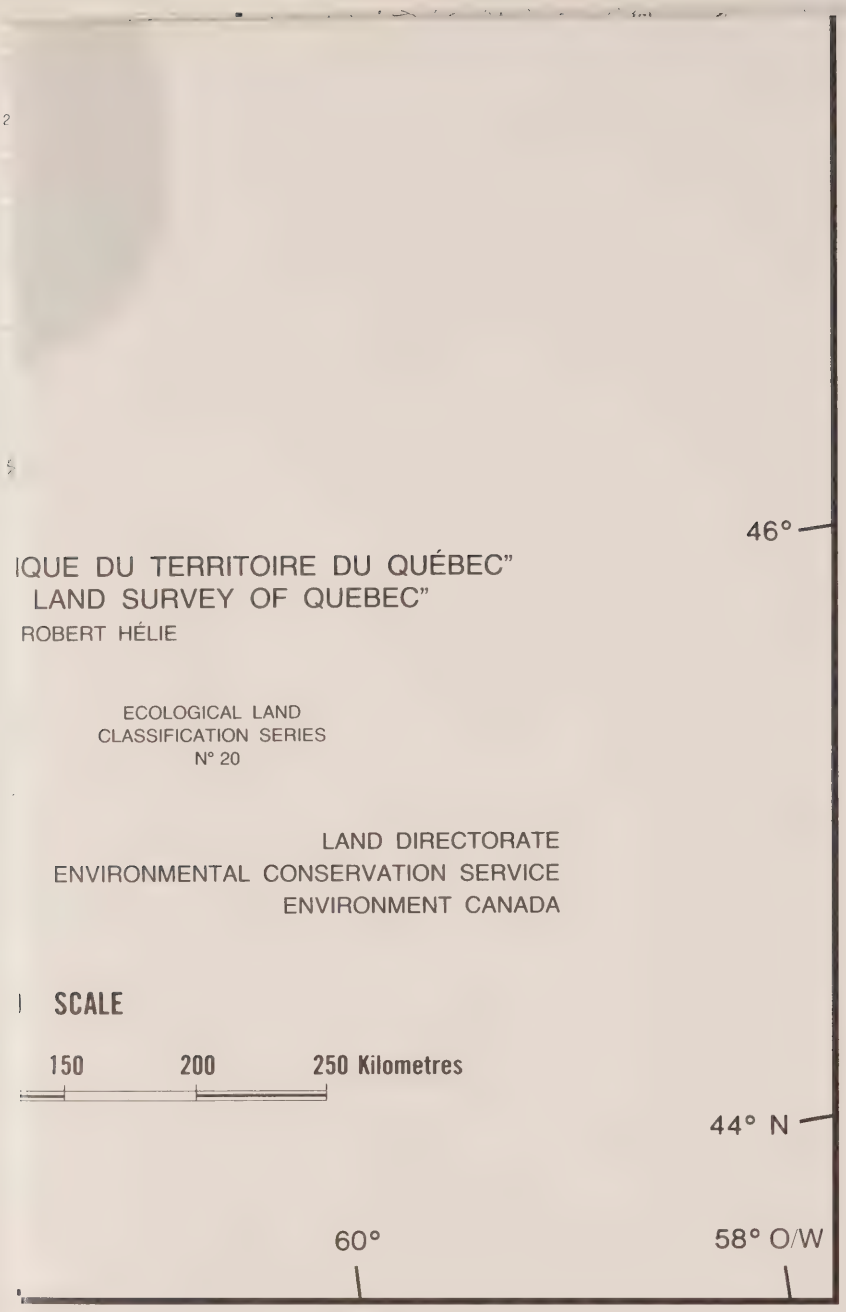

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ɔrmation, contact Chief, ECOLOGICAL RESEARCH AND INTEGRATED PROGRAMS, Lands Directorate, Ottawa, Ontario, K1A 0E7.

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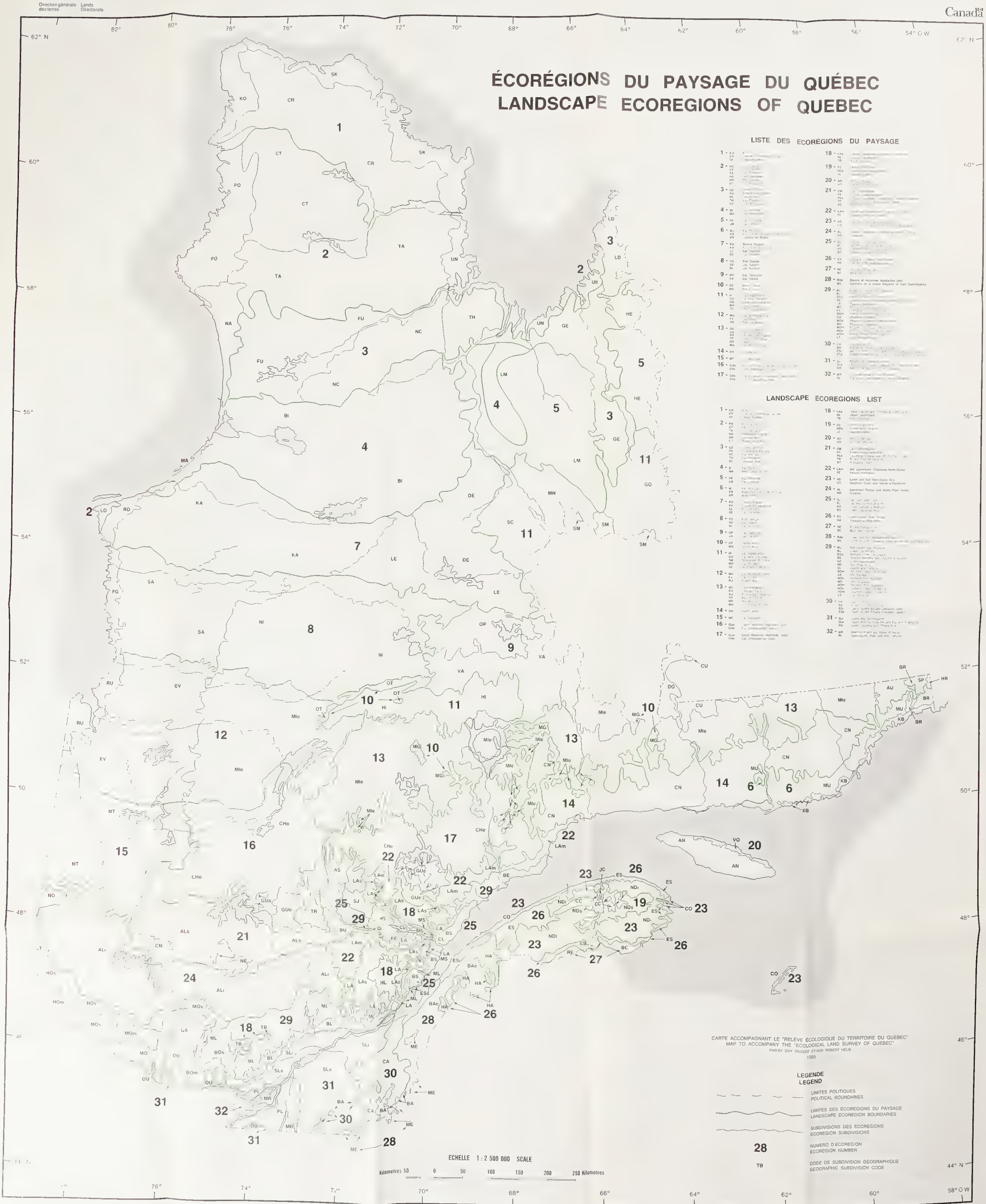

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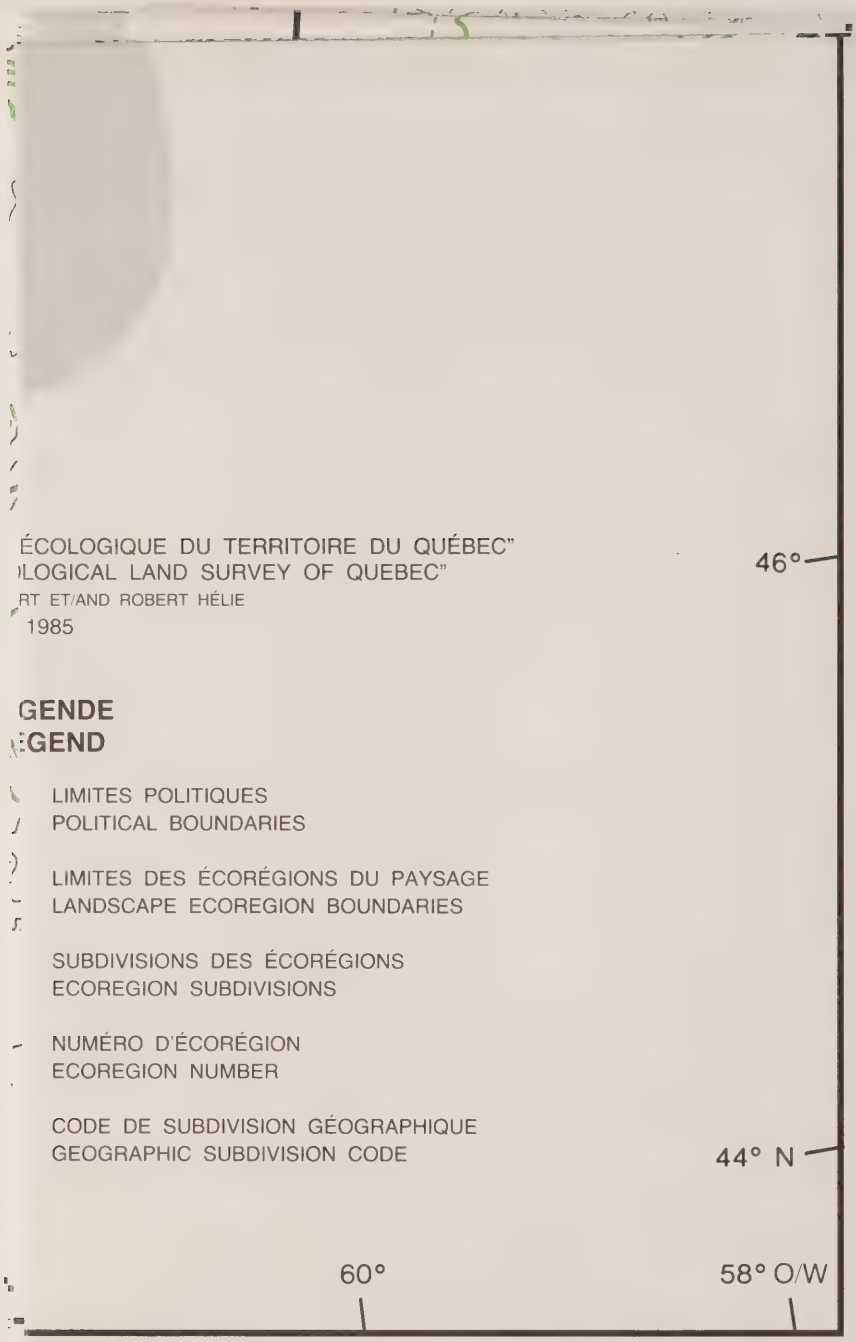

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ormation, contact Chief, ECOLOGICAL RESEARCH AND INTEGRATED PROGRAMS, Lands Directorate, Ottawa, Ontario, K1A 0E7.

ES: Saint Laurent Estuary Lowlands (lower)

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LA CAPACITÉ DES SOLS ET DE LA ROCHE EN PLACE À RÉDUIRE L'ACIDITÉ DES PRÉCIPITATIONS ACIDES AU QUÉBEC
POTENTIAL OF SOILS AND BEDROCK TO REDUCE THE ACIDITY OF INCOMING ACIDIC DEPOSITION FOR QUEBEC

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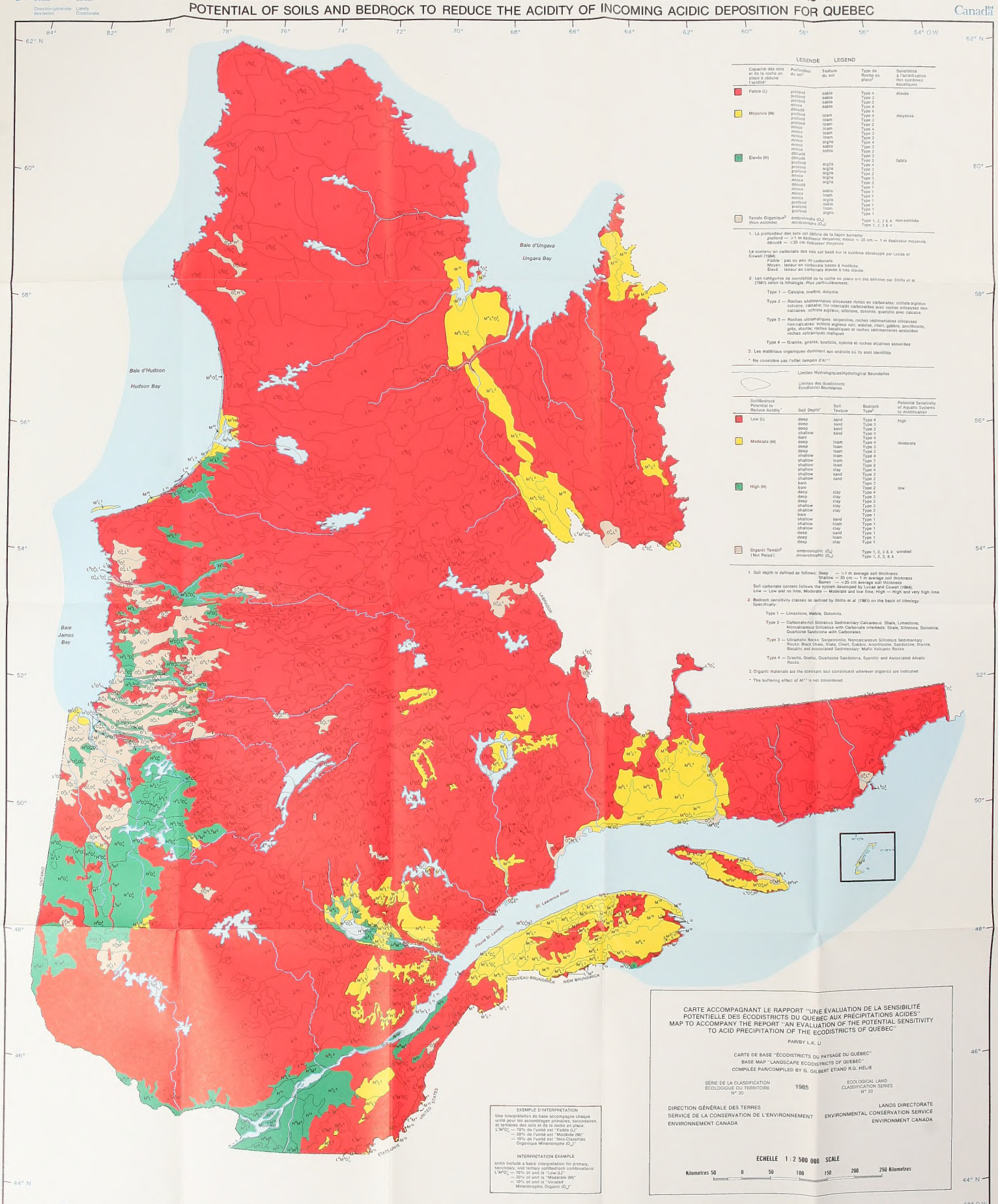

LEGENDE LEGEND

Capacité des sols et de la roche en place à réduire l'acidité[1]	Profondeur du sol[1]	Texture du sol	Type de Roche en place[2]	Sensibilité à l'acidification des systèmes aquatiques
Faible (L)	profond	sable	Type 4	élevée
	profond	sable	Type 3	
	profond	sable	Type 2	
	mince	sable	Type 4	
	dénudé		Type 4	
Moyenne (M)	profond	loam	Type 4	moyenne
	profond	loam	Type 3	
	profond	loam	Type 2	
	mince	loam	Type 4	
	mince	loam	Type 3	
	mince	loam	Type 2	
	mince	argile	Type 4	
	mince	sable	Type 3	
	mince	sable	Type 2	
	dénudé		Type 3	
Élevée (H)	profond	argile	Type 2	faible
	profond	argile	Type 4	
	profond	argile	Type 3	
	profond	argile	Type 2	
	mince	argile	Type 3	
	mince	argile	Type 2	
	dénudé		Type 2	
	mince	sable	Type 1	
	mince	loam	Type 1	
	mince	argile	Type 1	
	profond	sable	Type 1	
	profond	loam	Type 1	
	profond	argile	Type 1	
Terrain Organique[3] (Non-estimée)	embryonique (O_e) minéralisé (O_m)		Type 1, 2, 3 & 4 Type 1, 2, 3 & 4	non-estimée

1. La profondeur des sols est définie de la façon suivante:
profond — > 1 m épaisseur moyenne; mince — 25 cm — 1 m épaisseur moyenne; dénudé — <25 cm épaisseur moyenne

Le contenu en carbonate des sols est basé sur le système développé par Lucas et Cowell (1984):
Faible : pas ou peu de carbonate
Moyen : teneur en carbonate basse à modérée.
Élevé : teneur en carbonate élevée à très élevée.

2. Les catégories de sensibilité de la roche en place ont été définies par Shilts et al (1981) selon la lithologie. Plus particulièrement:

Type 1 — Calcaire, marbre, dolomie

Type 2 — Roches sédimentaires siliceuses riches en carbonates: schiste argileux calcaire, calcaire; lits intercalés carbonatées avec roches siliceuses non-calcaires: schiste argileux, siltstone, dolomie; quartzite avec calcaire

Type 3 — Roches ultramafiques: serpentine, roches sédimentaires siliceuses non-calcaires: schiste argileux noir, wollstie, chert, gabbro, anorthosite, grès, diorite; roches basaltiques et roches sédimentaires associées: roches volcaniques mafiques

Type 4 — Granite, gneiss, quartzite, syénite et roches alcalines associées

3. Les matériaux organiques dominent aux endroits où ils sont identifiés

* Ne considère pas l'effet tampon d'Al^{+3}

Limites Hydrologiques/Hydrological Boundaries

Limites des écodistricts
Ecodistrict Boundaries

Soil/Bedrock Potential to Reduce Acidity[1]	Soil Depth[1]	Soil Texture	Bedrock Type[2]	Potential Sensitivity of Aquatic Systems to Acidification
Low (L)	deep	sand	Type 4	high
	deep	sand	Type 3	
	deep	sand	Type 2	
	shallow	sand	Type 4	
	bare		Type 4	
Moderate (M)	deep	loam	Type 4	moderate
	deep	loam	Type 3	
	deep	loam	Type 2	
	shallow	loam	Type 4	
	shallow	loam	Type 3	
	shallow	loam	Type 2	
	shallow	clay	Type 4	
	shallow	sand	Type 3	
	shallow	sand	Type 2	
	bare		Type 2	
High (H)	bare		Type 2	low
	deep	clay	Type 4	
	deep	clay	Type 3	
	deep	clay	Type 2	
	shallow	clay	Type 3	
	shallow	clay	Type 2	
	bare		Type 1	
	shallow	sand	Type 1	
	shallow	loam	Type 1	
	shallow	clay	Type 1	
	deep	sand	Type 1	
	deep	loam	Type 1	
	deep	clay	Type 1	
Organic Terrain[3] (Not Rated)	embryonigic (O_e) mineralnigic (O_m)		Type 1, 2, 3 & 4 Type 1, 2, 3, & 4	unrated

1. Soil depth is defined as follows: Deep — >1 m average soil thickness
Shallow — 25 cm — 1 m average soil thickness
Barren — <25 cm average soil thickness
Soil carbonate content follows the system developed by Lucas and Cowell (1984):
Low — Low and no lime; Moderate — Moderate and low lime; High — High and very high lime.

2. Bedrock sensitivity classes as defined by Shilts et al. (1981) on the basis of lithology. Specifically:

Type 1 — Limestone, Marble, Dolomite.

Type 2 — Carbonate-rich Siliceous Sedimentary: Calcareous Shale, Limestone; Noncalcareous Siliceous with Carbonate Interbeds: Shale, Siltstone, Dolomite; Quartzose Sandstone with Carbonates.

Type 3 — Ultramafic Rocks: Serpentinite; Noncalcareous Siliceous Sedimentary Rocks: Black Shale, Slate, Chert; Gabbro, Anorthosite, Sandstone, Diorite; Basaltic and Associated Sedimentary: Mafic Volcanic Rocks.

Type 4 — Granite, Gneiss, Quartzose Sandstone, Syenitic and Associated Alkalic Rocks.

3. Organic materials are the dominant soil constituent wherever organics are indicated.

* The buffering effect of Al^{+3} is not considered.

CARTE ACCOMPAGNANT LE RAPPORT "UNE ÉVALUATION DE LA SENSIBILITÉ POTENTIELLE DES ÉCODISTRICTS DU QUÉBEC AUX PRÉCIPITATIONS ACIDES"
MAP TO ACCOMPANY THE REPORT "AN EVALUATION OF THE POTENTIAL SENSITIVITY TO ACID PRECIPITATION OF THE ECODISTRICTS OF QUEBEC"

PAR/BY L.K. LI

CARTE DE BASE "ÉCODISTRICTS DU PAYSAGE DU QUÉBEC"
BASE MAP "LANDSCAPE ECODISTRICTS OF QUEBEC"
COMPILÉE PAR/COMPILED BY G. GILBERT ETIAND R.G. HÉLIE

SÉRIE DE LA CLASSIFICATION ÉCOLOGIQUE DU TERRITOIRE N° 20 | 1985 | ECOLOGICAL LAND CLASSIFICATION SERIES N° 20

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SERVICE DE LA CONSERVATION DE L'ENVIRONNEMENT
ENVIRONNEMENT CANADA

LANDS DIRECTORATE
ENVIRONMENTAL CONSERVATION SERVICE
ENVIRONMENT CANADA

ÉCHELLE 1 : 2 500 000 SCALE

Kilometres 50 0 50 100 150 200 250 Kilometres

EXEMPLE D'INTERPRÉTATION

Une interprétation de base accompagne chaque unité pour les assemblages primaires, secondaires, et tertiaires des sols et de la roche en place:
$L^1M^2O_m^3$ — 70% de l'unité est "Faible (L)"
— 20% de l'unité est "Modérée (M)"
— 10% de l'unité est "Non-Classifiée Organique Minéralotrophe (O_m)"

INTERPRETATION EXAMPLE

Units include a basic interpretation for primary, secondary, and tertiary soil/bedrock combinations: $L^1M^2O_m^3$ — 70% of unit is "Low (L)"
— 20% of unit is "Moderate (M)"
— 10% of unit is "Unrated Minerotrophic Organic (O_m)"

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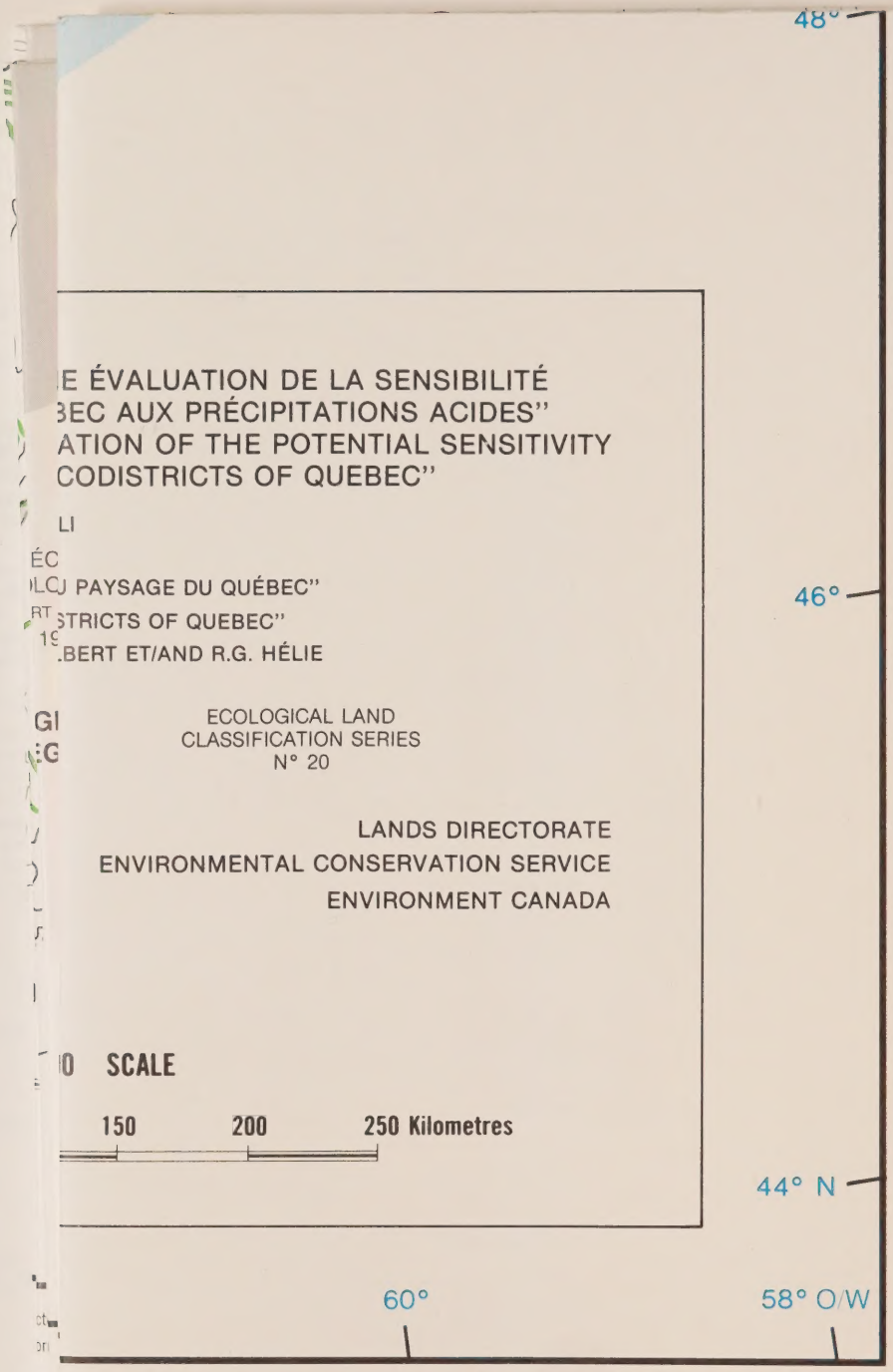

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